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PENICILLIN THERAPY OF SCARLET FEVER

Comparison with Antitoxin and Symptomatic Therapy

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In a previous publication[1] we reported on the efficacy of intramuscular penicillin X in the treatment of 34 cases of scarlet fever. Since that time we have continued to treat this streptococcic infection with other types of penicillin and now wish to report similarly good results in the treatment of 86 patients, representing 52 patients in addition to the 34 in the original group.

PLAN OF STUDY

All the patients studied were on the isolation service of the Gallinger Municipal Hospital. Three criteria were established for the inclusion of a patient in this series: (1) temperature of 102 F. or over; (2) evidence of pronounced toxicity regardless of the height of the temperature, or (3) the presence of a pyogenic compli-

The ages of the patients ranged from 1 to 41 years, although 79 were less than 12 years of age. There were an equal number of males and females; 54 patients were Negroes. All but 6 patients had temperatures of 102 F. or over on admission. Three of these 6 patients had complicating infections of the skin, and the remaining 3 were decidedly toxic, although their temperature was recorded as less than 102 F.

The first 34 patients were treated with penicillin X[2] and the results have been reported elsewhere.[1] Most of the patients in this group received 50,000 units of the medicament every six hours, although early in the study several different dosage schedules were employed. Crystalline penicillin G[3] was employed in the next 5 patients. The dosage schedule established was 25,000 units every three hours. Thereafter we decided to compare the results of penicillin therapy with those of administration of scarlet fever antitoxin. Alternate patients were given either commercial penicillin in doses of 25,000 units every three hours or 9,000 to 27,000 units of antitoxin, depending on the degree of toxicity. Sulfadiazine was given to the patients receiving antitoxin when there were evidences of a pyogenic complication. Twenty-nine patients were treated with penicillin and 25 received antitoxin. Four additional patients who received antitoxin were later eliminated from the series because the evidence was inadequate for the diagnosis of scarlet fever. Seven patients received sulfadiazine *in addition to antitoxin. A final group of 18 patients* were treated with oral penicillin, prepared in tablets containing 25,000 units buffered with calcium carbonate.[4] Since it has been recommended that three to ten times the parenteral dose be given for oral administration, we decided to administer five times our established parenteral dose, or 125,000 units, every three hours.

The duration of treatment is extremely important in the therapy of beta hemolytic streptococcic infections with penicillin. Plummer and his associates[5] showed that the incidence of relapse was high in patients treated for hemolytic streptococcic pharyngitis unless penicillin therapy was continued for four to six days. Our early experience with the use of penicillin in these infections confirmed this observation. We therefore established five days as a minimum period of treatment for scarlet fever. In 3 patients therapy was continued for two to four days longer because of the persistence of complications which had been present on admission. Three patients were given only a single injection of 100,000, 200,000 and 300,000 units, respectively, of penicillin X as a part of an investigation of the absorption and effect of large doses of this penicillin fraction.

Throat cultures on blood agar plates were taken on admission on all patients before treatment was begun, daily thereafter for five days and then at two to three day intervals until the patient was discharged. Some of the streptococci were typed according to the slide agglutination method of Griffith through the courtesy of Mr. J. N. Adam of the Lederle Laboratories, Inc.

RESULTS

The results of treatment of scarlet fever with penicillin were evaluated on the basis of the following criteria: (1) the time required for the temperature to fall and remain below 99 F. rectally, exclusive of fever due to complications; (2) the incidence of pyogenic complications developing after admission, and (3) the number of patients who were found to have beta hemolytic streptococci in their throats after the start of therapy. In table 1 are shown the results of treatment with the various preparations of penicillin. It can be seen that the response was essentially the same irrespective of the preparation and route of administration *employed.*

From the George Washington University Medical Division and the Infectious Disease Service, Gallinger Municipal Hospital, and the Departments of Medicine and Pediatrics, George Washington University School of Medicine.

[1] Hirsh, H. L.; Dowling, H. F., and Sweet, L. K.: Treatment of Various Infections with Penicillin X with a Preliminary Note on the Value of Penicillin X in Scarlet Fever, Ann. Int. Med. **25**: 78 (July) 1946.

[2] Supplied by the Lederle Laboratories, Inc., Pearl River, N. Y.

[3] Supplied by Merck & Co., Rahway, N. J.

[4] Supplied by the Lederle Laboratories, Inc., Pearl River, N. Y.

[5] Plummer, N.; Duerschner, D. R.; Warren, H. D.; Rogliano, F. T., and Sloan, R. G.: Penicillin Therapy in Hemolytic Streptococcic Pharyngitis and Tonsillitis, J. A. M. A. **127**: 369 (Feb. 17) 1945.

The various types of temperature response following penicillin therapy are depicted in charts 1, 2 and 3. Most patients had a rapid drop in temperature as shown in chart 1, while in a few the return of the temperature to normal was more prolonged (charts 2 and 3). The average duration of fever following the start of therapy was calculated for each group and found to range from forty-nine to fifty-four hours. The average for the group receiving penicillin X does not include 2 patients, 1 of whom had a normal temperature on admission and was treated because of the presence of an infected finger and another who failed to respond to penicillin therapy. In the case of the latter patient, the administration of penicillin was continued without effect for seventy-two hours, whereupon she was given 18,000 units of antitoxin with prompt improvement. Further study revealed that the type 14 hemolytic streptococcus isolated from her throat was resistant to the concentrations of penicillin found in her blood. The details are shown in chart 4.

Table 1.—*Comparison of the Results of Treatment of Scarlet Fever with Various Types of Penicillin*

Type of Penicillin Employed	Route of Administration	No. of Patients	Average Duration of Fever Following First Dose of Penicillin, Hrs.	No. of Patients Who Developed Pyogenic Complications After Admission	No. of Patients in Whom Throat Cultures Positive for Hemolytic Streptococci Recurred After the Completion of Therapy
X	Intramuscular	34	54	3	4
Crystalline G	Intramuscular	5	52	0	0
Commercial G	Intramuscular	29	50	3	3
Commercial G *	Oral	18	49	0	0
All patients.............		*86*	*52*	*6*	*7*

* Buffered with calcium carbonate

Table 2.—*Comparison of the Results Against Scarlet Fever in Patients Treated Symptomatically with Penicillin or with Antitoxin*

Method of Treatment	No. of Patients	Average Duration of Fever *	Incidence of Bacterial Complications After Administration	Incidence of Throat Cultures Positive for Hemolytic Streptococci During Convalescence
Commercial penicillin G †..	29	50	10%	10%
Antitoxin †....	25	29	44%	85%
All types of penicillin..... .	86	52	7%	8%
Symptomatic	123	90	26%	82%

* Calculated from the time of the first dose of penicillin or antitoxin or from the time of admission to the hospital in symptomatically-treated patients.

† Treated in alternation.

In 6 patients pyogenic complications developed following the start of therapy. Two patients who had received single injections of 200,000 and 300,000 units of penicillin X developed recurrent pharyngitis on the third and seventh hospital days, respectively. The first patient was given another injection of 200,000 units with rapid improvement, and the second recovered on symptomatic measures. The course of the second of these patients is shown in chart 5. Three patients, 1 treated with penicillin X and 2 with commercial penicillin, had recurrent pharyngitis on the fourteenth to twenty-first days after penicillin therapy was discontinued, following their exposure to fresh cases of scarlet fever. These 3 patients recovered within forty-eight hours on symptomatic therapy. In the sixth patient there developed a temperature of 101 F., which persisted for forty-eight hours and for which no cause could be determined. Although pyogenic complications occurred only in the groups of patients treated with penicillin X and commercial penicillin, the number of patients treated with oral or crystalline penicillin G intramuscularly was too small to lend significance to the absence of complications. In 3 patients there developed sequelae, namely, rheumatic fever, acute nephritis and serous meningitis.

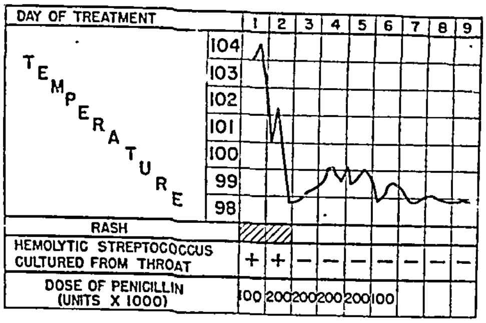

Chart 1.—E. H., Negro girl aged 3.

Among the 86 patients treated with penicillin, a beta hemolytic streptococcus was isolated from the throats of 75 on admission. The throat cultures were free of the organism in each instance within forty-eight hours after treatment was started. Only 5 patients who were adequately treated had a return of the beta hemolytic streptococcus while under observation, which was usually for a twenty-one day period. Three of these patients were exposed to fresh cases of scarlet fever on the fourteenth to twenty-first day after treatment was discontinued. Type 14 beta hemolytic streptococci were isolated from the cultures of material from the throats of the patients at the time of the recurrence as well as on admission. The contacts were found to have the same type of streptococci. The remaining 2 patients were found to have type 4 and type 19 streptococci in their throats on their eighteenth and nineteenth days of hospitalization, which persisted until their discharge on the twenty-first hospital day. Types 8 and 14 streptococci, respectively, had been isolated on admission from the cultures of material from the throats of these 2 patients. The 2 patients who had relapses

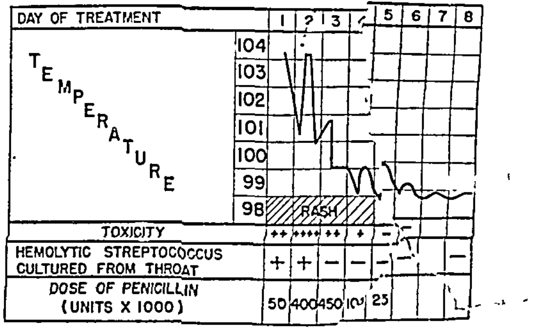

Chart 2.—I. D., Negro girl aged 8.

after inadequate penicillin therapy were found to have type 17 streptococci on admission and at the time of the relapse. The organisms disappeared from the throat cultures of 1 of these patients following an injection of 200,000 units of penicillin and from those of the other, who was treated symptomatically, after eight days. The effect of penicillin on the pharyngeal flora was independent of the type of penicillin employed or the method of administration.

Although only 18 patients have been treated with oral penicillin in comparison to 68 patients treated by the intramuscular route, in the small group the results were equally as good as in the patients treated parenterally. It must be borne in mind, however, that the oral dose was five times as great as the parenteral.

COMPARISON OF THE RESULTS OF PENICILLIN THERAPY, ANTITOXIN AND SYMPTOMATIC THERAPY

In table 2 we have listed the results of treatment with penicillin as compared with antitoxin on the basis of the three criteria established for the evaluation of therapy. It can be seen that the average duration of fever after the administration of antitoxin was twenty-nine hours as compared to fifty hours for the penicillin-treated patients. Of the 29 patients treated with penicillin, only 3 (10 per cent) had mild pyogenic complications consisting of mild pharyngitis on the fourteenth to twenty-first days after the completion of therapy. These complications can probably be accounted for on the basis of exposure to fresh cases of scarlet fever. Further treatment was not required, and the patients were improved within seventy-two hours after the onset of the recurrence. On the other hand, in 11 of the 25 patients (44 per cent) given antitoxin there developed pyogenic complications, consisting of 7 cases of otitis media, 2 cases of cervical adenitis and 2 cases of recurrent pharyngitis. All these patients were given sulfonamide therapy. Moreover, while only 10 per cent of the penicillin-treated patients had a return of hemolytic streptococci late in their hospital stay, 85 per cent of a similar group of patients treated with antitoxin continued to have the organisms in their throat for the greater part of the observation period of three weeks. The advantages of penicillin in preventing the carrier state are obvious.

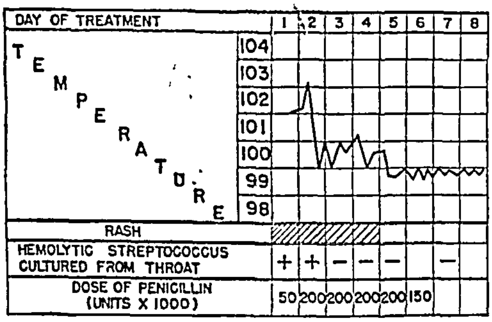

Chart 3.—D. D., white boy aged 14.

Meads and his associates [6] have reported on the treatment of 9 patients with 15,000 units every four hours for seven days. These investigators concluded that penicillin eliminated the hemolytic streptococcus carrier state and prevented complications due to this organism but that it did not influence the eruption and toxic manifestations of scarlet fever. We have compared the course of scarlet fever in 86 patients treated with penicillin with the course in 123 patients who were given only symptomatic therapy because the disease was considered too mild for additional treatment (table 2). The incidence of complications was 7 per cent in the penicillin-treated group compared with 26 per cent in the group treated symptomatically. The streptococcic carrier rate before discharge from the hospital was 8 per cent in the former and 82 per cent in the latter group. These results are in accord with the observations of Meads and his associates,[6] but in addition we found that penicillin reduces the toxicity and hastens the disappearance of the eruption. The average duration of fever was fifty-two hours in the patients treated with penicillin compared with ninety-nine hours in the group treated symptomatically. The decrease in toxicity paralleled the fall in temperature. Although the character of the rash in scarlet fever is exceedingly variable and difficult to evaluate, we were convinced that in the majority of instances the rash disappeared more rapidly in the penicillin-treated group of patients.

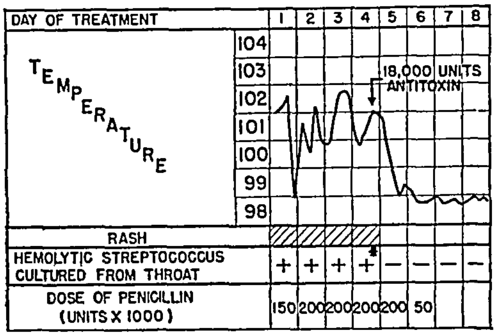

Chart 4.—E. H., Negro boy aged 4. * Hemolytic streptococcus sensitive to 0.625 unit of penicillin. The highest blood concentration equaled 0.156 unit of penicillin.

COMMENT

Although penicillin has been found to be highly bactericidal for the beta hemolytic streptococcus, the question of whether the various types of the antibiotic would be equally effective in the treatment of scarlet fever had to be determined. On treating 86 patients, we found that penicillin decreased the toxicity, greatly diminished the incidence of pyogenic complications and practically eliminated the carrier state.

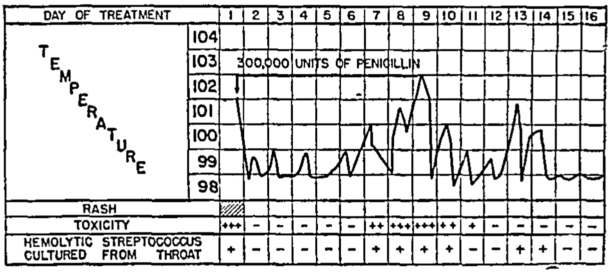

Chart 5.—M. D., white woman aged 29.

Our second problem was to determine a practicable dosage schedule. The administration of 25,000 units intramuscularly or 125,000 units orally of penicillin G every three hours for five days was found to be an adequate regimen for the great majority of patients. Fifty thousand units of penicillin X every six hours were equally efficacious. All but 1 of the patients

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6. Meads, M.; Flipse, M. E.; Barnes, M. W., and Finland, M.: Penicillin Therapy of Scarlet Fever, J. A. M. A. 129: 785 (Nov. 17) 1945.

treated according to these dosage schedules recovered uneventfully. Since the hemolytic streptococcus isolated from the throat of this patient was a more resistant organism, it is probable that the patient would have responded to penicillin had she received larger doses. The need for at least five days of treatment is demonstrated by the fact that 2 of 3 patients treated for shorter periods relapsed.

The results obtained by Epidemiology Unit no. 82, United States Naval Hospital, Treasure Island[7] were similar to ours. In patients treated for three days and receiving a total dose of 240,000 units, the incidence of pyogenic complications was 31 per cent and the recurrence of positive throat cultures was 77 per cent. When patients were treated for six days with 360,000 units the figures were 14 per cent and 27 per cent, respectively. Complications occurred in only 6 per cent of the patients and recurrence of positive throat cultures in only 8 per cent when treatment consisted of 480,000 units given during an eight day period. This group of investigators employed small doses consisting of 10,000 units every three to six hours.

The third problem was to compare the results of penicillin and antitoxin therapy. For this purpose two groups of patients were treated with each agent in strict alternation. The incidence of pyogenic complications in the group treated with penicillin was 10 per cent, compared with 44 per cent in the antitoxin-treated group, and the incidence of positive throat cultures after the start of therapy was 7 per cent and 85 per cent, respectively, for the two groups. On the other hand, the temperature took nearly twice as long to fall to normal in the penicillin-treated group as in the antitoxin-treated patients. Although this difference appears well defined, observations of the patients demonstrated that both groups felt as well within the same period of time. Usually the fall in temperature after the administration of antitoxin was precipitous. The fall in temperature following the initiation of penicillin therapy was generally rapid, but frequently there were slight elevations for a day or two, during which time the patients appeared and felt relatively well. It was these small spikes in temperature which prolonged the figures for the average duration of fever as determined by our criteria.

There were other apparent advantages of penicillin over antitoxin. Fourteen patients treated with penicillin entered the hospital with preexisting complications such as otitis media, cervical adenitis and infections of the skin. All recovered uneventfully from both the scarlet fever and the complication coincident with the use of penicillin. Several of these patients were treated for two to four days longer than the time prescribed for the treatment of the scarlet fever because of the relatively slower improvement of the complication. Penicillin obviated the need for sulfonamide drugs, which were administered to the patients treated with antitoxin who had evidence of pyogenic complications.

A further advantage of penicillin over antitoxin in the routine treatment of scarlet fever is the elimination of the frequent occurrence of serum sickness following the use of antitoxin. Among the 25 patients treated with antitoxin in the present study, for instance, 3 manifested serum sickness, whereas none of the 86 patients receiving penicillin showed any symptoms of hypersensitivity to this antibiotic.

Ashley[8] has reported that penicillin plus antitoxin is superior to antitoxin alone. We are unable to evaluate these observations because we did not employ the two agents in combination. It appears from our results that adequate penicillin therapy is sufficient for the treatment of most patients with scarlet fever. An occasional patient who is critically ill with this disease, however, will undoubtedly require antitoxin as well as penicillin. Based on our experience with 1 patient who failed to respond to penicillin, it would appear that any patient who does not improve after forty-eight hours of antibiotic therapy should be given larger doses of penicillin on the presumption that the streptococcus is relatively resistant to penicillin and probably should receive antitoxin also.

From a comparison of the results of penicillin therapy and symptomatic therapy of scarlet fever, it would appear prudent to treat mild cases of this disease with penicillin to reduce the incidence of pyogenic complications, which in themselves may be serious problems, even though the toxicity is not sufficient to require the use of penicillin.

Now that the value of penicillin in the treatment of scarlet fever has been established, one might conjecture as to the mode of action. Two of us[9] have shown that penicillin does not neutralize the erythrogenic toxin of the hemolytic streptococcus. Since penicillin in adequate concentrations is bactericidal for penicillin-sensitive organisms, it appears that this antibiotic brings about rapid disappearance of the beta hemolytic streptococci and thus eliminates the source of the erythrogenic toxin. The small amount of toxin already formed by the bacteria is apparently neutralized by the defenses of the body.

At present, we would recommend that all patients with scarlet fever be given penicillin intramuscularly in doses of 25,000 units every three hours of commercial or crystalline penicillin G or in doses of 50,000 units every six hours of penicillin X, or orally in doses of 125,000 units of commercial penicillin G every three hours. Severely toxic patients should receive antitoxin in addition. Penicillin therapy should be continued for at least five days, or until the patient has recovered from all pyogenic complications.

SUMMARY AND CONCLUSIONS

1. Eighty-six patients with scarlet fever have been treated with penicillin X, crystalline penicillin G and commercial penicillin.

2. Penicillin therapy resulted in a prompt fall in temperature, a decrease in toxicity and a decided reduction in the incidence of pyogenic complications and of the carrier state.

3. Penicillin was more effective than antitoxin or symptomatic therapy in the prevention of complications and in reducing the number of carriers and was equally as effective in decreasing toxicity. Antitoxin caused a more rapid decline in temperature than did penicillin. On the other hand, the temperature dropped more rapidly in patients given penicillin than in symptomatically-treated patients.

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[7] Observations on the Treatment of Scarlet Fever with Penicillin, Epidemiology Unit Number 82, Am. J. M. Sc. **217**: 417 (April) 1946.

[8] Ashley, P.: Treatment of Scarlet Fever, J. A. M. A. **130**: 771 (March 23) 1946.

[9] Dowling, H. F., and Hirsh, H. L.: The Inability of Penicillin to Inactivate the Dick and Schick Toxins, Proc. Soc. Exper. Biol. & Med. **63**: 163 (Oct.) 1946.

ADDENDUM

Since this paper was submitted for publication an additional 50 patients have been treated with 100,000 units of penicillin administered every four hours orally. The fall in temperatures and the decrease in toxicity were prompt. In none of the patients did there develop a pyogenic complication, and the beta hemolytic streptococcus disappeared during therapy in each instance.

PENICILLIN FOR SCARLET FEVER

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Almost from the moment penicillin became available for therapeutic purposes its value in the treatment of streptococcic infections was acknowledged.[1] For that reason we believed it desirable to determine if penicillin would be an efficient agent in the treatment of scarlet fever. We considered that it ought to be helpful in combating scarlet fever regardless of whether the disease was mild or severe. Consequently, during the past fourteen months we have used penicillin as an exclusive therapeutic agent for 116 patients with scarlet fever.

Since beginning our observations on the action of penicillin in scarlet fever, Meads, Flipse, Barnes and Finland [2] have published a report concerning 9 patients with scarlet fever who were treated with penicillin. Ashley [3] stated recently that the treatment of choice for scarlet fever consists in giving both convalescent scarlet fever serum and penicillin. But on the basis of past experience we believe equally good results may be obtained by the use of convalescent scarlet fever serum alone.[4] Other clinicians [5] have reported success with the sulfonamide compounds. However, in our opinion sulfonamide drugs are not of value in overcoming the toxemia of scarlet fever. Our primary purpose in making this study was not to demonstrate whether penicillin was more effective than sulfonamide compounds or convalescent scarlet fever serum against scarlet fever, but to decide if any beneficial response from the use of penicillin could be shown. On that account, we administered only penicillin to one group of patients and to other groups gave a single therapeutic agent for comparison.

Between Jan. 1, 1945 and March 1, 1946, 548 patients with scarlet fever were admitted to Municipal Contagious Disease Hospital. Of that number, besides the 116 who were given penicillin, 69 were treated with convalescent scarlet fever serum, 48 with one of the sulfonamide drugs and 2 with scarlet fever antitoxin; the remaining 312, who were given neither serum nor drug, served as controls. Owing to the fact that scarlet fever antitoxin was used only twice, these 2 instances are excluded from further consideration. Likewise, the single fatality among the 548 admissions is not included in any of the groups, because the patient concerned had received convalescent scarlet fever serum before she entered the hospital. However, we treated her with penicillin, but she died as the result of hepatitis and pericarditis which were present at the time of admission.

No criterion was followed in regard to selection of the remedies employed. Therefore we feel that some comparison of the different groups is justified for the following reasons: (1) all patients were treated in the same hospital in a given period of time; (2) in each group there were mild, moderate and severe instances of the disease, and (3) evaluations in respect to treatment were based on the impressions formed by the same observers through personal contact and study. Before analyzing the several groups it should be stated that scarlet fever in Chicago has been unusually mild during the past few years. This last fact is emphasized by the occurrence of only 1 death in our total series of 548 patients. Possibly a more informative comparison could have been made of the various methods of treatment if the disease had been of greater virulence.

Table 1.—*Forms of Scarlet Fever and of Treatment*

	Mild	Moderate	Severe	Total
Penicillin	52	55	9	116
Convalescent serum	44	23	2	69
Sulfonamide compounds	37	11	0	48
Control	200	110	2	312
Total	333	199	13	545

Table 2—*Averages Relating to Days Ill, Duration of Fever and Duration of Rash*

		Average			
	Patients	Days Ill on Admission	Temperature on Admission	Duration of Fever After Admission	Duration of Rash
Penicillin	116	3 86	101.69 F.	3 46	2 93
	69	2 98	101 9 F.	3 49	3 42
	48	3 5	100 88 F.	2 98	3 04
Control	312	3 2	100 88 F.	2.60	3 44

In table 1 the patients are classified according to the severity of the illness and are grouped in respect to the form of therapy administered. The number of mild cases was about 4 to 5 times greater among the controls than in any of the other groups. This fact is reflected by the low percentage of complications occurring in the control group. A somewhat similar situation exists in respect to the patients whose disease was classified as moderate. The number of severe cases was too small to permit any thoroughly satisfactory conclusions. In the various groups there was no special selection of patients either according to age or sex. Although the ages ranged from 7 months to 41 years, most patients were children. The average for all ages was 8.2 years. There was an almost equal division in respect to sex.

In table 2 the 548 patients are divided according to both method of treatment and average number of days ill at the time of admission. Although the average number of days ill was higher for the penicillin treated group, there is no sharp difference in the corresponding averages of the other groups. These averages suggest that the prognostic expectancy for patients in the group given penicillin would be the least favorable.

Again in table 2 it may be seen that the average range of temperature at the time of hospitalization varied bu

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From Municipal Contagious Disease Hospital, Chicago Health Department.

[1] Fleming, A: On the Antibacterial Action of Cultures of a Penicillium, with Special Reference to Their Use in the Isolation of Bacillus Influenza, Brit. J. Exper. Path. **10:** 226 236 (June) 1929. Abraham, E P.; Fletcher, C M, Gardner, A D, Heatley, N. G, and Jennings, M. A.: Further Observations on Penicillin, Lancet **2:** 177-188 (Aug.) 1941. Keefer, C. S.; Blake, F. G, Marshall, E. K, Jr.; Lockwood, J. S, and Wood, B., Jr.: Penicillin in the Treatment of Infections, J. A. M. A. **122:** 1217 1724 (Aug 28) 1943

[2] Meads, M.; Flipse, M E; Barnes, M W., and Finland, M.: Penicillin in Scarlet Fever, J. A. M. A. **129:** 785 789 (Nov. 17) 1945.

[3] Ashley, P.: Treatment of Scarlet Fever, J. A M. A **130:** 771-774 (March 23) 1946

[4] Hoyne, A L; Levinson, S O, and Thalhimer, W.: Convalescent Scarlet Fever Serum, J. A M A **105:** 783-789 (Sept. 7) 1935.

[5] Benn, E C Sulfanilamide in the Treatment of Scarlet Fever, Brit. M J. **2:** 644 646 (Sept) 1939.

slightly among the groups. An unexpected observation had to do with the duration of fever after the date of admission. For the groups receiving penicillin and convalescent serum the average number of days of pyrexia after admission was 3.46 and 3.49, respectively, whereas the corresponding figures for the sulfonamide-treated groups and the control patients was 2.98 for the former and 2.60 for the latter. The lowest average, which was for the control group, may be explained by the fact previously alluded to; patients in this group constituted by far the largest number of mild cases.

An additional point of interest was that notwithstanding the proportionately high average for the duration of temperature in the penicillin-treated patients, the average number of days of the rash was less than that in any of the other groups. For the penicillin-treated group the rash persisted for an average of 2.93 days; for the group receiving serum, 3.42; for the sulfonamide-treated group, 3.04, and for the control patients, 3.44 days.

In table 3 the complications which were present prior to admission and those which developed afterward are set forth with the respective percentages. The figures disclose two notable facts, one of which is contrary to general opinion. In the first instance it may be observed that sulfonamide-treated patients were not protected against further infection, because in 31.25 per cent in the sulfonamide group complications developed after therapy was begun; secondly, the percentage of complications which developed after the institution of treatment in the group given penicillin was less than half as great as that for those patients who received either sulfonamide compounds or convalescent serum.

TABLE 3.—*Complications in Relation to Time of Treatment*

		Before		After		Total	
	Patients	No.	%	No.	%	No.	%
Penicillin	116	29	25.0	18	15.51	47	40.51
Convalescent serum	69	1	0.014	26	37.67	27	39.13
Sulfonamide compounds	48	11	22.9	15	31.25	26	54.16
Control	312	3	0.003	58	18.58	61	19.55
Total	545	44	8.0	117	21.4	161	29.5

Among the entire group of 548 patients only 4.2 per cent suffered from suppurative otitis media during the entire course of their illness. This is an extremely low figure if compared with past years in which it varied from 12 to 14 per cent.[6] The small number of auricular complications cannot be attributed solely to improved methods of treatment, because in almost exactly one-half the patients who had a suppurative otitis media this complication developed after they received treatment. However, no patients had mastoiditis develop after entering the hospital, and only 6 had evidence of mastoiditis when admitted. Sinusitis accounted for 34 complications after admission, and nephritis developed in 5 patients. If the mild degree of generalized adenopathy which customarily occurs in scarlet fever is disregarded, cervical adenitis was present in a surprisingly small number of patients; there were only 13 instances of this complicatioon and all but 1 occurred after admission; 9 were in the control group. The penicillin-treated group embraced the largest number of patients who had complications at the time of admission. These included 4 with suppurative otitis media and 5 with catarrhal otitis media, 1 with peritonitis, 2 with bronchopneumonia and 1 with lobar pneumonia.

Among the treated groups the dosage of convalescent scarlet fever serum averaged little more than 20 cc., which was administered either intramuscularly or intravenously. While this is a small dose we have found in the past that such an amount was frequently effective in combating moderate attacks of scarlet fever. The sulfonamide group was treated with either sulfadiazine or sulfathiazole; in either case the dosage was practically the same. Adults were given 1 Gm. every four hours and children received half as much at similar intervals. The average number of days for sulfonamide administration was six. No unfavorable reactions took place.

For the penicillin-treated patients there was considerable variation in the number of days that this drug was used. Our procedure consisted of giving 10,000 units of sodium penicillin intramuscularly every three hours both day and night until the patient's temperature remained at a normal level for twenty-four hours. The average amount of penicillin which each patient received in the course of this treatment was 499,823 units, and the average number of days required for its administration was 5.4. Material from the nose and throat was not cultured at the end of treatment to determine whether or not hemolytic streptococci were present.

COMMENT

Among 548 consecutive hospital patients with scarlet fever there was only 1 death. As may be inferred from this fact, the disease was mild in most instances. All patients were divided into four groups: (1) 116 who received sodium penicillin; (2) 69 treated with convalescent scarlet fever serum; (3) 48 who were given one of the sulfonamide compounds, and (4) 312 controls. The cases in all groups were classified according to the severity of the infection as mild, moderate and severe. While there is pronounced disparity in the totals of the several groups, we believe that there is some basis for comparison.

Our study was purely a clinical one for the purpose of observing any advantages which penicillin might have as a therapeutic measure for scarlet fever. We found that penicillin exerted no special influence on temperature; the average duration of pyrexia after the institution of treatment was 3.46 days, whereas for the sulfonamide-treated group it was 2.98 and in the control patients only 2.60 days. For the group receiving convalescent serum the corresponding figure was 3.49. Nevertheless, in considering the temperature curves it is noteworthy that the penicillin group had the highest percentage of complications at the time of hospitalization. These results are in general agreement with the data of Meads, Flipse, Barnes and Finland.[2] On the other hand, contrary to the observations of these same authors, the duration of the rash seemed to be influenced in our penicillin-treated group, in which it averaged 2.95 days, whereas for the serum and sulfonamide groups the average duration of the rash was 3.49 and 3.04 days, respectively.

CONCLUSION

One hundred sixteen patients with scarlet fever were successfully treated with penicillin.

On the basis of our observations, penicillin is equally as good a therapeutic agent for scarlet fever as convalescent scarlet fever serum.

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6. Hoyne, A. L., and Spaeth, R.: The Ear Complications of Scarlet Fever, J. Pediat. **12:** 287-297 (March) 1938. Wesselhoeft, C.: Factors Influencing the Incidence and Course of Otitis Media in Scarlet Fever, Ann. Int. Med. **12:** 1473-1485 (March) 1939.

Penicillin is superior to sulfonamide drugs as a therapeutic measure for scarlet fever.

The most important advantage which the penicillin-treated patients possessed was that fewer complications followed its use than occurred with other forms of therapy.

Because our study included but few cases of severe scarlet fever, we believe a thoroughly reliable estimate of penicillin's worth can only be determined by using it against virulent types of scarlet fever.

Until it is proved that penicillin far outweighs in efficiency all other kinds of treatment for scarlet fever, its customary method of administration must be regarded as an obstacle to its use.

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THE REPAIR OF ARTERIOVENOUS FISTULAS

Evaluation of Operative Procedures and Analysis of Fifty-Three Cases

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and
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For many years the physiologic effects of arteriovenous fistulas have been the subjects of extensive study and experimentation. This work has been given added impetus by the occurrence of successive wars. Much of the reported physiologic data is controversial in nature, but from the clinical point of view very little controversy has arisen in the choice of surgical operations for arteriovenous fistula. The consensus has been that quadruple ligation with excision of the aneurysm is the ideal surgical procedure, although several ingenious operations have been devised to fit special cases. Elkin in a recent editorial [1] expressed the opinion that in general quadruple ligation with excision is the procedure of choice. Herrmann and Reid [2] advocated excision of the involved artery and vein together with the communication as the best means of effecting a cure. Holman [3] in his monograph has stated that the safest and most effective method of dealing with an arteriovenous fistula is quadruple ligation with excision. Most men believe that the danger of gangrene is not great because the collateral circulation is adequate in these patients.

However, much interest has been aroused by several recent reports which have advocated the reestablishment of the main arterial pathway because the end results following quadruple ligation have not been satisfactory. The fundamental problem is to determine whether arterial suture is really necessary when the more commonly performed ligation operation has been successful, provided sufficient time is allowed for the development of collateral circulation before surgical intervention Maybury,[4] reporting on war casualties in England, pointed out that, despite the presence of an adequate collateral circulation, successful ligation of a main artery is always followed by a reduction of blood pressure amounting to that of 10 to 20 mm. of mercury below normal in the affected limb, with some permanent wasting of distal muscles. He went on to state that although the patient's permanent disability will not be severe and may not interfere with his work as a civilian, nevertheless his limb will not withstand heavy labor and severe fatigue.

In 1945 Blakemore and Lord [5] reported 3 cases of arteriovenous fistula in civilians whose occupations required considerable physical exertion. The detailed follow up in these cases showed that after quadruple ligation had been performed each patient experienced pain and fatigue in the leg on full exertion. One patient, a dancer, was unable to resume his work because of symptoms involving his leg after the surgical operation. The other 2 "were unable to indulge in vigorous sports or exercise to which they had been accustomed before receiving the injury."

Bigger [6] and Freeman [7] both have shown recently that resection of the main artery for arteriovenous fistula does not cause an acute circulatory disturbance but is usually followed by evidence of persistent circulatory deficiency.

Table 1.—*Vessels Involved in Fifty-Three Cases of Arteriovenous Fistula*

Head and Neck		Upper Extremity		Lower Extremity	
Vessel	No	Vessel	No	Vessel	No.
Intracranial ..	3	Axillary .	2	Common femoral	12
Common carotid	1	Brachial	4	Superficial femoral	14
External carotid	3	Radial.	1	Profunda femoris.	2
Occipital	1	Ulnar..	1	Popliteal	2
Temporal	2		..	Anterior tibial	1
Subclavian	3		. ..	Posterior tibial	1
Total	13	Total .	8	Total	32

Because of these differences in opinion, the present study was undertaken in an effort to evaluate the results of various surgical procedures used to treat this condition.

PRESENTATION OF MATERIAL

Scope of Study—The records of 53 patients with arteriovenous fistula treated in the past twenty years at Touro Infirmary and at Charity Hospital of Louisiana in New Orleans were reviewed. Many of the cases have been reported previously in great detail, and we are deeply indebted to the members of the surgical staffs of these institutions for permission to use their records in this study.

Table 1 shows the vessels involved in these cases. Of a total of 53 cases 13, or 25 per cent, occurred in vessels of the head and neck; 8, or 15 per cent, occurred in vessels of the upper extremity, and 32, or 60 per cent, occurred in the vessels of the lower extremity.

A study of the surgical report in each case showed that in general three main types of surgical operations were used: (1) ligation operations; (2) restorative procedures, and (3) intrasaccular obliterative procedures.

Ligation Operations—1. Twenty-six patients were treated by quadruple ligation of the main vessels, with

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Read before the Section on Surgery, General and Abdominal at the Ninety Fifth Annual Session of the American Medical Association, San Francisco, July 3, 1946

[1] Elkin, D C Arteriovenous Aneurysm, editorial, Surg, Gynec & Obst. **80:** 217-219 (Feb) 1945

[2] Herrmann, L G, and Reid, M R The Management of Arteriovenous Aneurysms in the Extremities, Am J Surg **44:** 17-24 (April) 1939.

[3] Holman E Arteriovenous Aneurysms, New York, The Macmillan Company, 1937.

[4] Maybury, B The Treatment of Arterial Injuries, Brit M Bull **2:** 142-144, 1945

[5] Blakemore, A H and Lord J W, Jr A Nonsuture Method of Blood Vessel Anastomosis, J A M A **127:** 748-753 (March 31) 1945

[6] Bigger, I A The Treatment of Traumatic Aneurysms and Arteriovenous Fistulas, Arch Surg **49:** 170-179 (Sept) 1944

[7] Freeman, N E Ann Surg **124.** 888-919 (Nov) 1946

excision of fistula and sac. In the excision of the fistula many patients also required ligation of numerous collateral vessels which were communicating with the sac.

2. Six patients were treated by ligations less than quadruple. These included intracranial fistulas and others in which quadruple ligation could not be performed. One patient required a triple ligation because the distal portion of the vein had become obliterated in the scar following the original trauma.

Table 2.—*Cases with Evidence of Vascular Insufficiency*

Type of Surgical Operation	No. of Cases	No with Vascular Insufficiency	%
(*a*) Restorative procedures	8*	0	0.0
(*b*) Ligation operations	29†	8	27.5
(*c*) Intrasaccular obliterative procedures	7	5	71.0

* The 2 fistulas that were clamped and ligated were eliminated from our statistical study because restoration of the artery was unimportant for maintenance of blood flow to the area supplied by the involved vessels. Two additional cases were eliminated because the artery was obliterated in an attempt to perform a transvenous arteriorrhaphy and therefore were included with the obliterative procedures.

† Seven additional cases were eliminated because the involved vessels were either intracranial or their restoration was unimportant for maintenance of blood supply to a part (e. g. ulnar, radial, occipital and temporal arteries).

Table 3.—*Postoperative Vascular Insufficiency*

Case	Vessels	Type of Operation	Evidence of Vascular Insufficiency
3	Superficial femoral	Obliterative endoaneurysmorrhaphy	Recurrence of fistula two weeks after surgical operation
4	Brachial	Sextuple ligation and excision of fistula	Loss of radial pulse, ischemia of fingers and swelling of arm and forearm; pain in hand three months after operation
6	Superficial femoral	Obliterative endoaneurysmorrhaphy	Color changes of toes and ulcer on dorsum of foot preoperatively; progressive necrosis of toes and pain in foot postoperatively; ulcer did not heal
10	*Superficial femoral*	*Quadruple ligation with excision*	*Ischemia; pain persisted after surgical intervention*
11	First portion of right subclavian artery and innominate vein	Quadruple ligation; also ligation of right internal and external jugular veins	Hand and arm purple and cold; right hand weaker than left six months after operation
15	Right brachial artery and basilic vein	Obliterative endoaneurysmorrhaphy	Onset of cold weather caused fingers to become excessively blue, numb and cold; cervicodorsal sympathetic block required
20	Profunda femoris	Preoperative lumbar sympathetic block with alcohol; obliterative endoaneurysmorrhaphy plus accidental ligation of superficial femoral	Persistent swelling of left leg
21	Common femoral	Quadruple ligation with excision of sac; required the ligation of profunda femoris as well as other collateral vessels	Foot became cool; sympathetic block produced increased temperature in the thigh but not in the foot; patient discharged with difference in temperature between right and left foot
30	Common femoral	Quadruple ligation with excision of sac; required the ligation of some collateral vessels	Lumbar blocks required to relieve postoperative pain in leg and foot
33	Common femoral	Preoperative sympathectomy; quadruple ligation; four collateral vessels ligated in order to remove fistula	Leg swollen, indurated and painful; no pulsation in distal vessels; patient had to stop smoking; elastic bandages were required to control swelling
T41	Common femoral	Obliterative endoaneurysmorrhaphy	Bluish discoloration of foot; edema worse on exercise
T42	Common femoral	Quadruple ligation and ligation of branches from sac	Persistent edema of leg
T48	Popliteal	Quadruple ligation and excision of sac	No dorsalis pedis or posterior tibial pulse; pain in leg and foot; area of anesthesia on foot

3. Four patients required sextuple ligations. These were cases in which the main artery with its venae comitantes was involved.

Restorative Procedures.—1. Eight patients were treated by transvenous arteriorrhaphy (Matas-Bickham) [8] or a modification thereof.

2. Two patients had small fistulous tracts which could be divided between clamps and ligated.

3. In 1 patient the fistula was excised and a venous graft with vitallium tubes was attempted, after the method of Blakemore and Lord.[5] The venous graft in this case proved to be too short, and a quadruple ligation finally was performed. In the statistical study this case was considered as a quadruple ligation and excision.

Intrasaccular Obliterative Procedures.—Seven patients were treated by means of a Matas intrasaccular obliterative aneurysmorrhaphy.[9] Although a transvenous repair was attempted in 2 patients, it was recognized at the time of the surgical operation that the artery had been obliterated completely. These cases therefore were included under obliterative procedures.

The significant results of this investigation are incorporated in table 2. The postoperative course of each patient was studied for evidence of vascular insufficiency subsequent to the surgical operation. To evaluate the effects of different surgical procedures on the arterial blood supply of the affected region, the following symptoms and signs were used as criteria of local circulatory insufficiency: (1) pain on exercise; (2) ischemia; (3) discoloration of skin distal to the fistula; (4) coldness of the skin distal to the site of the fistula as compared with the skin of the opposite side; (5) persistent lack of pulsation in vessels distal to the site of the surgical operation; (6) gangrene; (7) atrophy of muscles, and (8) recurrence of fistula.

Nine cases were eliminated from the statistical analysis because the fistula was intracranial or the restoration of the artery was not important for maintenance of an adequate blood supply to a part (e. g. ulnar, radial, occipital or temporal arteries).

ANALYSIS OF DATA

Of the 8 patients treated by a restorative procedure (transvenous arteriorrhaphy), none developed evidence of postoperative vascular insufficiency distal to the repaired fistula. On the other hand, 8 of the 29 patients treated by ligation procedures showed local vascular insufficiency, as did 5 of the 7 patients treated by intrasaccular obliterative procedures (table 2).

Analysis of these data revealed that the difference between the incidence of postoperative vascular insufficiency following ligations and obliterative endoaneurysmorrhaphy as compared with that following restorative procedures was statistically significant. The statistical analysis was carried out by the Chi Square (χ^2) method with the Yates modification for small samples.

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[8] Bickham, W. S.: Textbook of Operative Surgery, Philadelphia, W. B. Saunders Company, 1924, vol. 2, p. 70.

[9] Matas, R.: Operation for Radical Cure of Aneurism Based on Arteriorrhaphy, Tr. Am. S. A. **20:** 396-434, 1902.

In table 3 the 13 cases in which postoperative vascular insufficiency developed are described in greater detail.

COMMENT

The surgical procedures used in these cases merit a brief discussion.

Quadruple Ligation with Excision (fig. 1).—In the hands of most surgeons quadruple ligation with excision adequately cures the fistula and is a relatively safe procedure. It requires dissection around the sac and fistula with ligation and division not only of the main vessels but also of the collateral vessels that are encountered during the course of the surgical operation. Although this was the technic most frequently used in these cases with considerable success, there are certain definite disadvantages inherent in the surgical procedure. 1. It requires ligation of the main arterial pathway, which should not be performed unless it is absolutely necessary. 2. Dissection around the sac results in ligation of some collateral vessels which may be essential for maintenance of the flow of blood to distal parts. 3. The dissection of the sac is often time-consuming, requiring the ligation of innumerable bleeding points caused by increased pressure in the veins around the fistula. 4. It is not physiologic. 5. It is followed in many cases by evidence of postoperative vascular insufficiency.

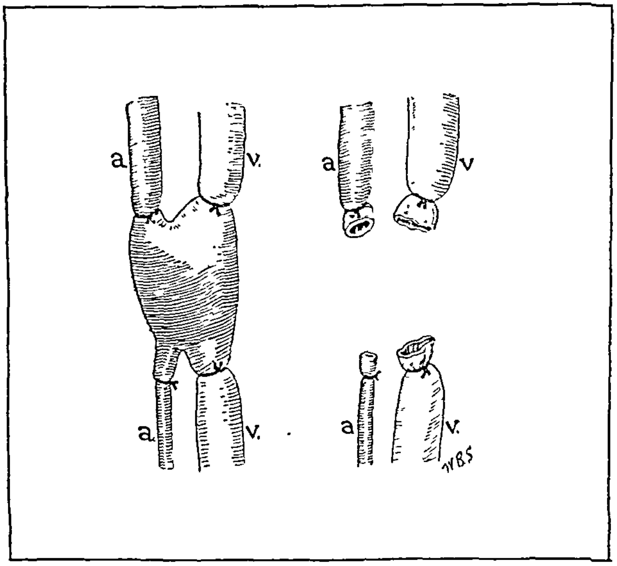

Fig. 1.—Quadruple ligation with excision of sac and fistula; *a*, artery; *v*, vein (in figs. 1 through 6).

Sextuple Ligation (fig. 2).—Sextuple ligation is a procedure required for an arteriovenous fistula which occurs between an artery and its two venae comitantes. It is fundamentally a ligation and excision operation with disadvantages which theoretically do not differ from those mentioned previously under quadruple ligation and excision. However, this technic is the only one of advantage in the presence of dual fistulas. A restorative procedure is usually contraindicated because too much of the arterial wall has been destroyed and because the caliber of the artery is ordinarily too small.

Transvenous Arteriorrhaphy (figs. 3 and 4).—Transvenous arteriorrhaphy can be performed easily if the fistula occurs in a region where the blood supply can be controlled either by a proximal constrictor or by temporary ligatures on the artery and vein proximal and distal to the fistula.

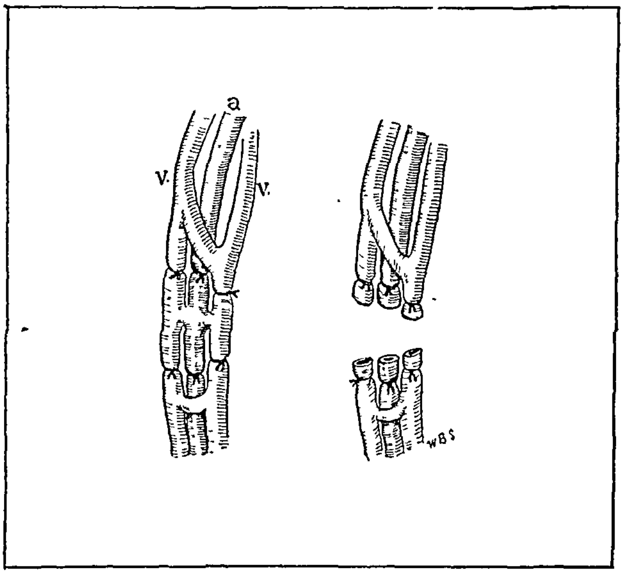

Fig. 2.—Sextuple ligation with excision of the dual fistulas and the involved artery with its venae comitantes.

The advantages of this operation are well known: 1. It preserves the main arterial pathway, which is especially important in certain regions such as those supplied by the common and internal carotid arteries and the popliteal artery. 2. It provides a rapid approach to the fistula, which can then be closed under direct vision. 3. There were no cases treated by a transvenous arteriorrhaphy in this series in which evidence of postoperative vascular insufficiency developed. 4. This procedure tends to restore the physiology of the

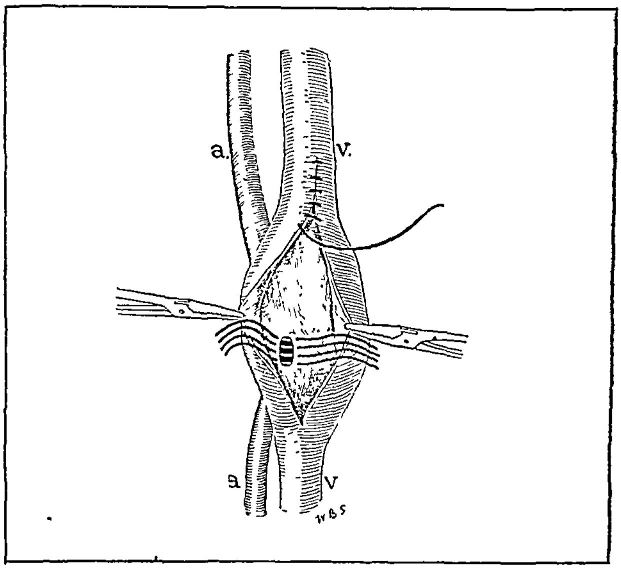

Fig. 3.—Transvenous arteriorrhaphy with closure of fistula and suture of the vein. Repair of the vein may lead to venous thrombosis with the danger of pulmonary embolus and is therefore not advocated.

circulation to normal. The disadvantages of this procedure stem chiefly from local factors that are present at the time at which the surgical intervention is done which contraindicates its use.

1. The procedure requires an arterial wall which has not undergone advanced pathologic changes. 2. A sufficient amount of arterial wall must be present to permit the closure of the fistula without causing a serious reduction in the lumen of the artery. 3. It requires control of circulation, which at times may be difficult or impossible to obtain. 4. Occasionally the repair of the artery will result in a decided reduction or even complete obliteration of the lumen with a diminished flow of blood to distal parts. This is a technical error, and every effort should be made to avoid it. 5. Should postoperative infection supervene, there is always danger of secondary hemorrhage. 6. Thrombosis or recurrence may follow this procedure in some instances.

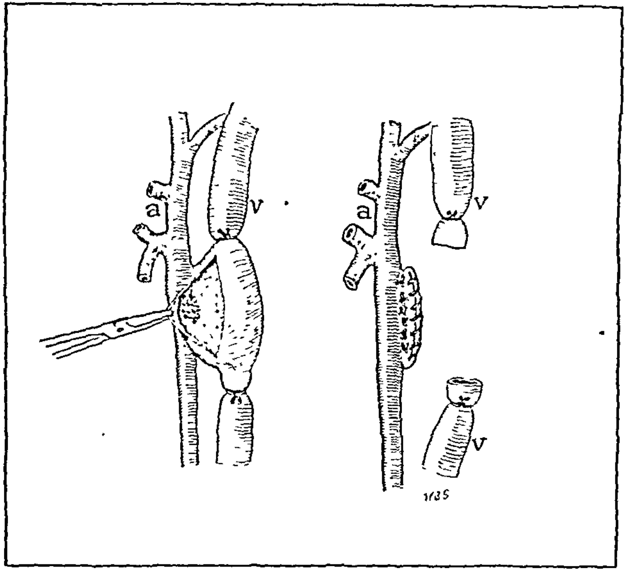

Fig. 4.—Transvenous arteriorrhaphy with closure of fistula by suture and obliteration of the vein. This eliminates the danger of venous thrombosis at the suture line and is the method we prefer.

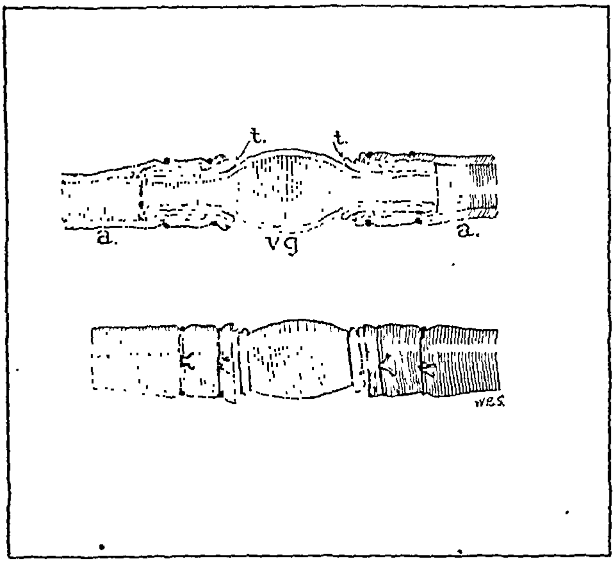

Fig. 5.—Vitallium tube-venous graft technic (Blakemore and Lord); *a*, artery; *t*, vitallium tube; *v.g.*, venous graft.

Vitallium Tube—Venous Graft Method (Blakemore and Lord).—The development of this technic (fig. 5) offers a new approach to the problem. The vein is cut and ligated proximally and distally. Then the intervening portion of the vein is excised with the fistula and the involved segment of artery is restored by means of two vitallium tubes and a venous graft.

This procedure is advantageous for the following reasons: 1. It provides for complete excision of the fistula and sac. 2. Despite the excision of the involved portion, the main artery is restored to function. 3. It is relatively simple and does not require suturing the blood vessels. 4. It is actually a combined quadruple ligation and restorative procedure, thus presenting the advantages of both.

The disadvantages of this method may arise from the fact that the dissection of the sac and fistula may seriously interfere with the collateral circulation. Because of this, vascular insufficiency may result if early thrombosis should occur in the venous graft.

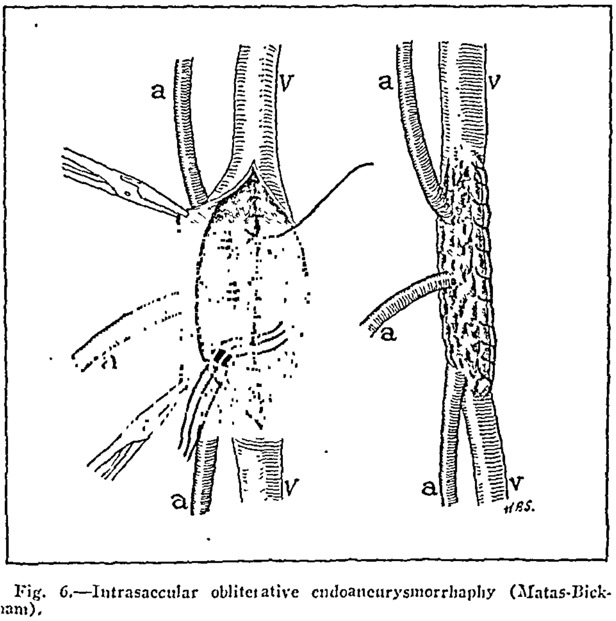

Fig. 6.—Intrasaccular obliterative endoaneurysmorrhaphy (Matas-Bickham).

This procedure still requires extensive clinical experience before it can be evaluated accurately. Blakemore and Lord, however, have reported remarkable results from its use in their civilian cases.

Obliterative Procedures.—Intrasaccular obliterative endoaneurysmorrhaphy (fig. 6), designed primarily for the treatment of true or false aneurysms, has also been used successfully in the treatment of arteriovenous aneurysms. It must be emphasized that this procedure requires adequate proximal control of circulation by a constrictor. It provides for direct entry into the sac with careful identification and suture of all openings, including those of the main artery and vein. The tourniquet is released to determine if all openings have been closed, and the walls of the sac then are folded into the cavity by sutures, completely obliterating the aneurysm.

The advantages of this procedure are as follows: 1. It cures the fistula. 2. It preserves the collateral vessels because no dissection is required around the sac. Figures 7 and 8 show how collateral channels are preserved by this method.

The disadvantages of this procedure are: 1. It obliterates the main arterial pathway. 2. It can be performed only in an area in which proximal control of circulation by a constrictor is possible. 3. The data derived from this series of cases indicate that this procedure is followed by a high incidence of vascular insufficiency.

Evaluation of Various Procedures.—It seems, therefore, that an accurate evaluation of the various surgical procedures used in the repair of arteriovenous fistula becomes difficult. Since no two cases are alike, an infinite number of variable factors present themselves at the surgical operation and often require individual consideration.

The most important of these factors can be divided into two groups depending on whether they contraindicate restoration of the artery or quadruple ligation.

The factors which prevent the use of arteriorrhaphy are usually local in nature. Such observations as scarring around the vessels, pathologic changes in the arterial wall, the presence of a false sac opposite the fistula and calcification in the wall of the aneurysm all preclude the possibility of restoring the main artery. Because these factors are relatively common, quadruple ligation with excision is performed in the majority of cases. On the other hand, if there is poor development of collateral circulation or if the fistula occurs in an area where the preservation of the main artery is vital (e g. the popliteal, carotid or brachial artery) quadruple ligation may be followed by serious complications. In such patients some type of restorative procedure is essential.

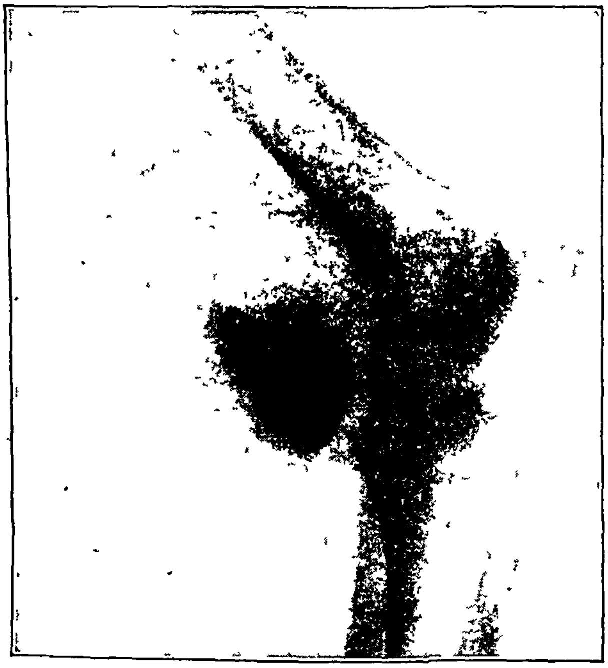

Fig 7—Demonstration of arteriograms taken in a case of Dr Urban Maes This is a syphilitic popliteal aneurysm, with the two main openings into the sac superficial to the deeply placed sac and the collateral vessels closely adjacent

The high incidence of vascular insufficiency following obliterative endoaneurysmorrhaphy was somewhat surprising since the surgical procedure is designed primarily to preserve the collateral vessels in close proximity to the sac. However, this can be explained on the basis that several of these patients were found to have extremely large sacs. In such instances there was so much damage to collateral vessels as a result of the large sac that any surgical operation other than preservation of the artery was likely to be followed by evidence of an inadequate flow of blood.

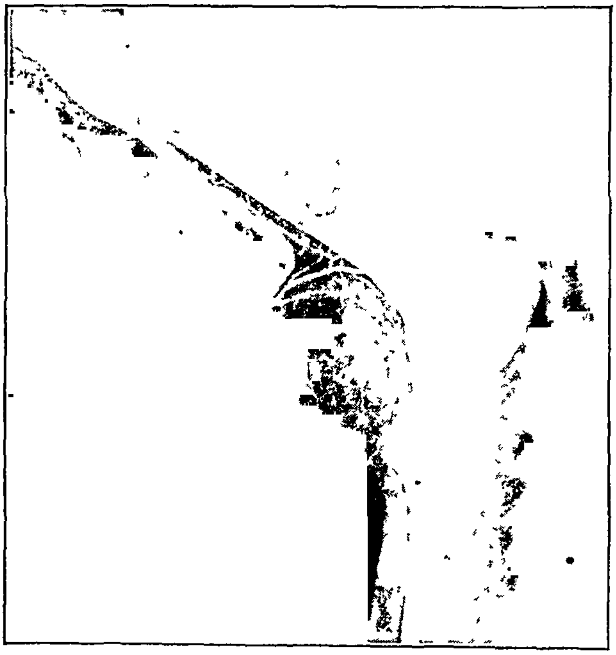

Fig 8—Conditions after a typical intrasaccular suture by the Matas method The largest collateral vessels emerge from the main trunk so close to openings into the sac that it would be impossible to ligate the vessels without destroying them In addition, numerous collateral channels have been preserved by this method because dissection around the sac was not required Although this is not an auriculoventricular aneurysm, these arteriograms are used to show the advantages of such an operative procedure.

Although the majority of the patients in this series were treated by quadruple ligation, a number of the surgeons in their operative notes explained in great detail why a transvenous arteriorrhaphy could not be performed. They invariably pointed out that the presence of some of the aforesaid factors contraindicated an attempt at restoration of the main artery.

There was 1 postoperative death in this group of patients, with a mortality rate of 1.9 per cent. The fatal result occurred in one of the early arteriorrhaphies because of surgical erysipelas and streptococcic septicemia. This in all likelihood could have been prevented if chemotherapy had been available at that time.

From the review of the literature and of the cases presented in tables 2 and 3 it would seem that there is no definite surgical procedure of choice for an individual arteriovenous fistula So many factors are involved in the decision as to what operation is suitable for each patient that the surgeon must be prepared to perform any one of a number of procedures. The decision usually can be made at the operating table when most of the local factors are visible It must be emphasized that each patient presents a highly complex and individual problem The statistical study indicates that restoration of the main artery must be the primary purpose of any surgical operation for arteriovenous fistula

SUMMARY AND CONCLUSION

In 53 cases of arteriovenous fistula three main types of surgical intervention were used: (1) ligation operations, (2) restorative procedures and (3) intrasaccular obliterative procedures.

Comparison of these three types of surgical operation on the basis of postoperative vascular competency and analysis of our data indicate that transvenous restorative procedures are followed by significantly fewer cases of vascular insufficiency than are any of the procedures which involve ligation or obliteration of the main artery.

The procedure of choice can be determined at the operating table when the local factors become apparent; the principal objective of the surgeon is to restore the original arterial pathway if possible.

There was 1 death in 53 cases, with a mortality rate of 1.9 per cent.

ABSTRACT OF DISCUSSION

Dr. Emile F. Holman, San Francisco: Surgeons must ever strive to be perfectionists, and it is apparent from these studies, excellent and critical as they are, that permanent ligation of the main artery to a limb is not a perfect or even a desirable procedure because of the risk not only of functional impairment but also of gangrene. It is obvious that restoration of the artery is imperative in certain instances, particularly in a "green" fistula or one recently incurred. Certain very helpful observations can be made at the operating table in determining whether or not the restoration of the artery is imperative. One of the main helps is the so-called Henle-Coenen phenomenon. The operation is begun without a tourniquet since full vessels are so much more easily identified and isolated than are empty and collapsed vessels. The vessels proximal to the fistula are isolated first, followed by isolation of the vessels distal to the fistula. Before attacking the fistula itself, the proximal artery is temporarily occluded to determine the state of the distal artery. If the distal artery is pulsating, it is proof that the artery can be permanently ligated and the fistula excised completely. If the distal artery is soft or collapsed it is obvious that the collateral circulation may be deficient, and under these circumstances one of the several methods of restoration of the artery as outlined by Dr. Heringman should be attempted. The transvenous approach to the fistula is very acceptable, except, of course, in a long-standing fistula where there is often pronounced sclerosis at the site of the fistula. I attempted such a local closure of the rent in the artery in 1 patient who had had his fistula twenty-five years. There was some sclerosis, although I did not consider that it was sufficient to preclude the suturing of the rent. However, there developed after the operation a very definite fusiform dilatation at the site of the closure—fortunately never productive of any disability.

Intrasaccular closure of the rent in the artery is also available on occasion and can be used to good advantage when the artery and vein open separately into the same sac.

Dr. Norman E. Freeman, San Francisco: Recent advances in the understanding of the physiology of the circulation have led to improvement in the treatment of lesions of the major arteries. During the recent war nearly 1,000 patients with wounds of the large arteries were treated in the vascular centers of the U. S. Army general hospitals. Only 3 cases of gangrene were encountered. Much credit for this remarkable achievement is due to the fundamental teachings of Matas. These teachings can be summarized in two sentences: 1. Time must be given for the development of collateral circulation. 2. The operative technic must be designed to preserve collateral vessels. Although the incidence of gangrene was almost negligible, interruption of the major artery to a limb may lead to persistent symptoms of impaired circulation. Dr. Heringman and his associates have clearly shown that surgical procedures which involve ligation or obliteration of the main artery are followed by significantly more instances of vascular insufficiency as compared with the number following repair. My experiences in the vascular center at DeWitt General Hospital are in agreement with the data of the author. Nine of 12 patients who had quadruple ligation and excision of femoral or popliteal arteriovenous fistulas found their activities restricted. By comparison, of 11 patients with similar lesions which had been treated by arterial repair, only 2 reported that their activities were limited by intermittent claudication. In the group of patients with excision, the oscillations at the ankle were only 0.75 unit, while in those with repair of the artery, the oscillations were 3.85 units. Although it is well known that the circulation may be adequate for tissue nutrition at rest even in the absence of palpable pulses, the preservation of pulsatile arterial flow through the major arteries is naturally to be preferred for muscular activity. Dr. Heringman has emphasized the fact that each patient presents an individual problem and that final decision can be made only at the time of surgical operation. Degenerative changes in the wall of the artery are the chief obstacle to its restoration. Important collateral vessels should never be sacrificed in order to mobilize the artery, since they alone may prevent gangrene in case the repair is unsuccessful. Improved function after successful repair offers a real goal toward which the aim of vascular surgery should be directed.

Dr. J. Ross Veal, Washington, D. C.: I would like to stress a point which has been overlooked so far; the use of sympathectomy or sympathetic nerve block following the interruption of the main vessels. This observation was first made by Dr. Gage of New Orleans. He found that the use of sympathetic block before and after repair of arterial aneurysms and arteriovenous fistulas caused a rapid development of collateral circulation. Soon after his report, I began to use sympathectomy in conjunction with the repair of arterial aneurysms and arteriovenous fistulas. There has been a remarkable improvement in the postoperative course of patients after sympathectomy. In cases in which I formerly had some dread of the possibility of the development of gangrene, it has been entirely eliminated. In those cases in which one cannot restore the lumen of the major artery I think an immediate sympathectomy should be performed. I feel sure that in the younger group of patients, such as those in this war, one can almost completely eliminate the postoperative deficiency of circulation by this procedure.

Dr. E. Craig Heringman, New Orleans: I would like to thank Drs. Holman, Freeman and Veal for their enlightening discussion of this problem. It seems to me that we need to establish some criteria for the choice of procedure. Certainly, with more attention being drawn to this problem, other men will find an increase in the incidence of postoperative insufficiency following quadruple ligation, with the result that we may be able to learn more about the problems involved in the choice of surgical operation. With reference to the question that Dr. Freeman raised, none of the cases of transvenous arteriorrhaphy showed any evidence of recurrence or of aneurysm. One recurrence followed an intrasaccular obliterative aneurysmorrhaphy. The question of sympathectomy before operation is an important one, and I think that Dr. Freeman recently reported a group of cases in the majority of which sympathectomy was performed. There were a number of sympathectomies in the present series that we reported. Several cases of quadruple ligation did show postoperative vascular insufficiency despite sympathectomy.

Number of Eggs of Flies.—In a research project being conducted at Rutgers University for the Army in which studies are being made on the raising of houseflies for experimental purposes, the greatest number of eggs deposited by one fly in one day, observed thus far in this work, was 162, and the greatest number for one fly during its life was 1,500 The longest duration of life for male flies observed has been 32 days and for females 41 days.—War Department Public Relations Division, Feb. 6, 1947.

OCULAR MANIFESTATIONS OF PSYCHOSOMATIC DISORDERS

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"Nearly half a millenium B. C., Socrates came back from army service to report to his Greek countrymen that in one respect the barbarian Thracians were in advance of Greek civilization: 'They knew that the body could not be cured without the mind. This,' he continued, 'is the reason why the cure of many diseases is unknown to the physicians of Hellas, because they are ignorant of the whole.' "

This quotation, the opening sentence in H. Flanders Dunbar's[1] book "Emotions and Bodily Change" is, in effect, a brief of a new approach in modern medicine.

Thus the psychosomaticist frankly admits that his theories are centuries old and effectively forestalls the frequent criticism that the concept of psyche and soma as a unity has nothing new to offer the medical world.

The age of medical specialization was inevitable because, in the modern world, Socrates' "ignorance of the whole" was inevitable. No human mind can encompass the whole of medical knowledge, and the place of the specialist is secure. But the tendency has gone too far, and the concept of psychosomatic interrelationships is a healthy attempt to foster a closer cooperation and understanding among the specialties and particularly between the psychologist or psychiatrist and the physician trained to think only in terms of organic pathology.

As Dunbar has so aptly put it, "psychic and somatic represent merely two angles of observation. Our understanding of disease rests on pictures taken from these two angles viewed simultaneously, united stereoscopically."

This resolution of the dichotomy "body-mind," using as it does the idea of visual fusion or stereopsis, should appeal greatly to the ophthalmologist, but there is little evidence that it has done so.

The concept of psychosomatic medicine has been enormously advanced by the experience of the second world war. Like Socrates, many young men have returned from military service with the realization that their previous thinking had been entirely too limited in scope. Many of these men were forced by the exigencies of military medicine to revert to general practice and to forget that they might be highly trained specialists in the morbidity of a single organ. Even those who worked in their own limited fields quickly discovered that a high percentage of their problems were neuropsychiatric or psychosomatic.

Sometimes an ophthalmologist or perhaps a thoracic surgeon attached as a Naval medical officer to a Marine regiment would live in such close contact with his troops that, unless he were of the most rigid mental makeup, he could not help but see them as fellow human beings rather than as a group of potential casualties. A short time spent on a board of censors, for example, is an illuminating medical experience. The flight surgeon in the confined atmosphere of a carrier or at a small advanced flight training school soon learned that he must know his fliers before he could successfully treat their illnesses. Many of these men profited by their enforced separation from their specialties. Others, unfortunately, spent most of their time complaining of their temporary dislocation from their accustomed way of thought.

However, in spite of the experience of the war, consideration and medical treatment of the organism in terms of organs still plays a dominant role in the medicine of the present day, and this is outstandingly true of ophthalmology.

Numerous authors have called attention to the prevalence of ocular signs and symptoms of psychogenic origin, but their articles have almost completely escaped the attention of ophthalmologists and, in fact, have been hopelessly buried in the literature under the headings of "neurology" or "miscellanea."

The past twenty years have shown revolutionary changes in the study and clinical application of psychology and psychiatry, but ophthalmologists have taken little or no advantage of these changes. In spite of an exceedingly rich field for investigation in psychosomatic problems they remain almost entirely out of contact with this vital stream of new knowledge.

Almost every ophthalmologist is familiar with the ocular manifestations of psychosomatic disorders which are to be discussed in this paper but, to judge from the literature, personal communications and personal observations of methods of diagnosis and treatment, few are aware of the significance of what they see.

It would be impossible to discuss, in one article, all the ocular syndromes of psychogenic origin. Certain specific ones will be considered, as follows:

1. Ocular manifestations of vasomotor disturbance
    (a) Amaurosis fugax
    (b) Migraine
    (c) Neurocirculatory asthenia
    (d) Central angiospastic retinopathy
    (e) Raynaud's disease
2. Glaucoma
3. Ocular manifestations of hysteria

It will be seen from this list that the majority of the disturbances to be considered fall into the first group. And, in fact, aside from the frank ocular neuroses and hysteria, a large number of psychosomatic ocular disorders derive secondarily from a primary inbalance of the autonomic nervous system. Glaucoma, as it is affected by psychic disturbance, is classified alone though it might well be considered within the vasomotor group.

The role played by emotion in the production of discharge from the autonomic nervous system and the resultant profound physiologic disturbance, especially in the cardiovascular system, are well known. Dunbar has no less than thirty-eight references to Cannon in her book and lists twenty of his articles in her bibliography. Most of these are concerned primarily with the effect of emotion on the autonomic system either directly or through the endocrine system. Mittleman and Wolff[3] have experimentally studied the simultaneous emotional and physiologic manifestations of affective states in persons in a standardized physical environment and recorded their cutaneous temperatures radiometrically. The affective states contained various degrees of tension, anxiety, quiet, embarrassment, irritation, anger, rebellion, inadequacy, insecurity, humilia-

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[1] Dunbar, H. F.: Emotions and Bodily Change, ed. 3, New York, Columbia University Press, 1946.

[2] Footnote deleted on proof.

[3] Mittleman, B., and Wolff, H. G.: Affective States and Skin Temperature, Psychosom. Med. 1: 271, 1939.

tion, grief, depression, despair and excitement. They discovered that the fall in cutaneous temperature was greatest during periods of sustained apprehension. Patients with Raynaud's disease differed in no essential from other subjects except in the association of pain, cyanosis and pallor with a major drop in the temperature of the fingers. They concluded that, although vasoconstriction under circumstances of stress is usually a minor event in the reaction of the organism to life situations, it may acquire a pathologic significance in maladjusted subjects or in those reacting to life crises and in patients with Raynaud's disease.

Gifford and Marquardt[4] described a type of central angiospastic retinopathy associated with abnormal variations in cutaneous temperature, especially in smokers.

I have reported a large series of ocular disturbances associated with autonomic imbalance and vasoneurotic diathesis.[5] These were seen in great numbers in the armed forces and include central angiospastic retinopathy and retinopathy associated with Raynaud's disease. They were associated with abnormal reactions in the temperature of the skin and directly related to sustained emotional disturbance incident to military service.

Zeligs[6] has reported a series of identical cases of central angiospastic retinopathy as a psychosomatic study.

It should be obvious that vasospasm which is radiometrically measurable in the extremities in susceptible persons is capable of producing physiologic or even permanent pathologic changes in a tissue as sensitive to anoxia as is the retina. This is especially true when one considers the extreme vulnerability of the macular circulation. It should also be plain that the difference between the transient visual disturbance in amaurosis fugax and the permanent visual loss in angiospastic retinopathy resulting in hole in the macula is one of degree only. The mechanism of production is the same.

AMAUROSIS FUGAX

One of the commonest and most disturbing symptoms confronting the ophthalmologist is periodic, transient, "black-out," "dim-out" or fleeting amaurosis. In most cases it is either ignored or minimized. Often a new pair of glasses is ordered which, as a psychotherapeutic measure, may give temporary relief.

During the war this symptom was so frequently encountered in hospitals and dispensaries, both in zones of combat and in areas far removed from them, and was so obviously associated with unpleasant duty, anxiety, frustration and fear that the very term "black-out" became synonymous with desire for a change of duty. Many of these patients were accused of malingering, and undoubtedly some were guilty of conscious misrepresentation of their troubles, but I feel that in many instances the disturbance was real to the patient, and at times it was genuinely disabling.

On two occasions my clinic in a large hospital near Pearl Harbor was overrun with young Negro ammunition handlers from a nearby ammunition depot, most of whom suffered from this complaint. After careful ophthalmologic examination of a large number of these had been made with essentially negative results it was determined that in each instance there had been a minor accident in the depot the day before, and inquiry of the medical officer attached to the depot revealed that his list for sick call had more than trebled overnight. Further investigation showed that the psychiatric clinic was simultaneously crowded and that many persons with well advanced anxiety neurosis were seen. A number of the ophthalmologic patients were studied psychiatrically and showed evidence of severe and sustained tension and anxiety. A high percentage of these patients suffered from severe headache and orbital pain associated with their visual disturbance. Almost all of them showed definite evidence of vasomotor or autonomic instability.

Numerous instances of amaurosis fugax were seen in young junior officers. In a number of cases tactful questioning revealed a gradually decreasing efficiency, a clash of personalities with the superior officer to whom they were responsible and a visual disturbance precipitated by a poor fitness report submitted by their commanding officer. Evidences of emotional stress, anxiety, anger and vasoneurotic diathesis were outstanding.

The symptoms of amaurosis fugax vary from a fleeting dimness of vision which lasts only a few seconds to complete visual loss for a number of minutes at a time. Frequently the disturbance is associated with use of the eyes. Several naval aviators, grounded because of such attacks, explained that the visual disturbance was identical with that which they had experienced in a "pull-out" from a power dive. This latter amaurosis, which immediately precedes a transient state of unconsciousness, is known to result from drainage of blood from the cerebrum or retina or both into the large splanchnic reservoirs, due to sudden deceleration and the downward pull of gravity exerted on the upright body. The resulting temporary anoxia of the sensitive nerve tissue causes the familiar "black-out." In all these fliers there was strong evidence of emotional disturbance, usually anxiety, induced by failure to reach certain standards in their work. The condition became progressively worse in each case until a vicious circle was established in which increasing anxiety resulted in increasing symptoms. In at least 1 instance the symptoms were precipitated by suddenly increased responsibility incident to rapid promotion. In all cases the disturbance was cured by readjustments resulting in relief from anxiety.

Amaurosis fugax is, I believe, primarily vasomotor in origin with a retinal or cerebral anoxia precipitating the visual disturbance.

There is another type of temporary visual disturbance which is also psychogenic in origin but which is due to the production of a lenticular myopia of measurable amount. This condition, sometimes called "ciliary spasm," is thought to be due to spastic contraction of the ciliary body with resultant increase in the anteroposterior diameter of the lens. It is seen only in young persons, is immediately relieved by instillation of a mild cycloplegic drug and is always associated with emotional disturbance. The myopia may measure as much as 2 D., and visual acuity may be reduced from normal to 20/200 in a period of a few hours. A typical example is the medical student who is failing in his studies. As examinations approach he becomes more and more anxious about his grades and begins to study longer and longer hours. The resulting ocular and general fatigue increases his anxiety until finally his vision fails and examination reveals his spastic myopia. In each of 5 instances a readjustment of his curriculum by an understanding dean was sufficient to allay his fear of failure and restore ocular function to normal.

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[4] Gifford, S. R., and Marquardt, G.: Central Angiospastic Retinopathy, Arch. Ophth. **21**: 211 (Feb.) 1939.

[5] Harrington, D. O.: The Autonomic Nervous System in Ocular Disease, Am. J. Ophth. **29**: 1405 (Nov.) 1946.

[6] Zeligs, M.: Central Angiospastic Retinopathy: A Psychosomatic Study of Its Occurrence in Military Personnel, to be published.

Considerable space has been devoted to the consideration of the relatively insignificant physiologic disturbance producing amaurosis fugax because its psychosomatic aspects can be so readily demonstrated. It is also felt that the condition differs only in the matter of degree from the much more serious and permanent changes seen in central angiospastic retinopathy, described later in this article.

MIGRAINE

Perhaps migraine does not belong in a paper devoted to the ocular manifestations of psychosomatic disorders. The visual disturbances associated with migraine are primarily cerebral in origin, but numerous authors have reported visible retinal vascular changes during attacks of migraine. I have for considerable periods of time observed 2 cases of severe migraine in which I could demonstrate easily visible vasoconstriction in the retinal arterioles during the aura preceding the attack and continuing on into the period of preheadache hemianopsia. In each instance there was overwhelming evidence of emotional instability, and in 1 case I was able to precipitate attacks almost at will by induction of an anxiety state.

Wolff[7] demonstrated that cerebral vasodilation associated with a sustained normal level of blood pressure caused symptoms to disappear in a subject with preheadache symptoms of scotoma, whereas a procedure that decreased cerebral blood flow caused the symptoms to become worse. From this he deduced that cerebral vasoconstriction was responsible for the visual defect. He expressed the opinion that the cause of the visual defect was not in the retina or orbit but within the cranial cavity.

Wolff[8] also showed that subjects with migraine demonstrated certain typical personality features and reactions, and it has been my experience that this is true.

The ophthalmologist has unexcelled opportunities to study migraine. Most of its sufferers eventually report to him for observation because of either the headache or the visual disturbance. In most instances they fully realize that their trouble is not ocular in origin but are hoping against hope that something may be done for them. Too often they are not even recognized for what they are and are fitted with another pair of glasses. A more careful analysis of the patients' symptoms and particularly of their history and personality pattern would reveal an emotional background in keeping with the vasomotor origin of the disturbance. Most subjects with migraine are overly conscientious. They accept responsibility but only at great cost to their peace of mind. They are apt to suffer from insomnia. Many have stated that they could predict an impending attack by a sudden and almost overwhelming burst of mental and physical energy. Unfinished work preys on their sense of duty.

There is always migraine, but during periods of stress its incidence and severity are enormously increased. Thus, during World War II medical officers in all branches of the armed service were confronted with great numbers of such patients, many of them completely incapacitated in their work.

A typical example of this was seen in a young Naval officer who had been promoted rapidly to a position of relatively high rank for his age and experience. He had had infrequent and rather mild attacks of migraine-like headache since childhood but had noted no preheadache scotoma. His record was excellent and he was known to be unusually hard-working and conscientious. When he was given the command of a new heavy cruiser he suddenly began to experience a severe type of migrainous headache, occurring at frequent intervals and associated with prolonged and virtually disabling preheadache scintillating scotoma and hemianopsia. His exaggerated sense of duty caused him to suffer great anxiety over the possible effect on his ship should he have these attacks at sea or possibly even during combat.

Though he fully realized that his excellent record of service would be marred and that he might even be retired as physically unfit for duty, he reported to his medical officer and requested to be hospitalized. Examination, including neurologic and ophthalmologic examination, revealed no abnormality except that during three separate attacks there was seen a rather pronounced localized spasm of a segment of the superior temporal artery of the retina. This same artery was normal in appearance between attacks and during the headache phase of an attack and showed a visible spasm only during the preheadache scotoma and hemianopsia. Psychiatric examination revealed a well defined but not severe anxiety neurosis.

Under relatively superficial psychotherapy and relief from tension by assignment to a new command involving less responsibility this officer was completely relieved of his migraine for a considerable period of time.

NEUROCIRCULATORY ASTHENIA

After a thorough review of the literature and a careful evaluation of the various theories and concepts of neurocirculatory asthenia, Dunn[9] concluded that the majority of patients with this condition show a psychologic disturbance. The condition should be classified with the psychosomatic neuroses. Neurotic traits are commonly found. Precipitating factors may be emotional strain, physical strain or infection, but the important causal factor seems to be anxiety, anger or guilt, accentuated particularly by military experience.

As was to be expected, the incidence of neurocirculatory asthenia was greatly increased during World War II. There were few medical officers who did not have experience with it whether they were cardiologists or regimental surgeons in the field, or whatever their specialty or duty station.

It was generally agreed by most of the medical officers with whom I talked that the classification of the disturbance with the psychosomatic neuroses was correct. Through the cooperation of a group of medical officers in a large overseas Naval hospital I had the opportunity of observing a fairly large number of patients with neurocirculatory asthenia from an ophthalmologic standpoint. A high percentage of these men showed evidence of a vasoneurotic diathesis. Most of them exhibited hyperhidrosis. A few, the cutaneous temperature of whose fingers and toes I was able to determine under controlled conditions, showed distinctly abnormal reactions. A high percentage had visual disturbances, without organic disease or refractive error. Many gave a history of amaurosis fugax. Two patients demonstrated a typical angiospastic retinopathy, and there were 3 instances of hysterical amblyopia. While I have been unable to find in the literature any report of ocular disturbance in neurocirculatory asthenia, my limited experience with this psychosomatic disorder would indicate that ocular symptoms of psychogenic origin are sufficiently common to aid in diagnosing the condition. This is particularly true in civilian practice, where the absence of a military *background would tend to obscure the precipitating causes.*

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[7] Wolff, H. G.: Headache Mechanisms: A Summary, A. Research Nerv. & Ment. Dis., Proc. (1942) 23: 173, 1943.

[8] Wolff, H. G.: Personality Features and Reactions of Subjects with Migraine, Arch. Neurol. & Psychiat. 37: 895 (April) 1937.

[9] Dunn, W. H.: Emotional Factors in Neurocirculatory Asthenia, Psychosom. Med. 4: 333, 1942.

CENTRAL ANGIOSPASTIC RETINOPATHY

Horniker,[10] in 1929, and Gifford and Marquardt,[4] in 1939, described a lesion of the macular region of the retina which in their opinion was of angioneurotic origin and which the latter descriptively called "central angiospastic retinopathy." Both authors established evidence of vasomotor instability in their reports of cases and demonstrated the vasospastic causation of the retinal lesion. Both mentioned psychic trauma as a possible factor in precipitating the vasospasm but laid more stress on organic than on functional causation.

During World War II so many cases of central visual loss with macular edema, foveal pigmentation and hole in the macula were described by medical officers that a study of the condition was authorized by the National Research Council and was undertaken by Cordes,[11] in 1944. He correlated the data submitted by eleven Naval medical officers, including 16 cases under my observation, and concluded that, while the cause of the lesion had not been established, the survey seemed to "justify further study as to etiology, *giving special consideration* to possible peripheral vascular disease and angiospasm."

I have had an opportunity to study personally nearly 100 cases of central angiospastic retinopathy and have reported 40 selected cases.[5] In a number of instances studies of the peripheral vascular system were made, *and in all cases so studied there was definite evidence* of vasomotor instability. In a majority of the other cases the clinical evidence of vasoneurotic diathesis was so striking as almost to preclude the necessity of special vasomotor tests.

The various autonomic stimuli were found to be extremely active under wartime living conditions, particularly psychic trauma. The only constant factor in all cases of central angiospastic retinopathy was autonomic instability. It was concluded that "psychic trauma in a susceptible individual can produce as profound organic changes in connection with the autonomic nervous system as extremes of temperature, anoxemia or direct physical trauma."

The clinical entity of central angiospastic retinopathy begins acutely as a grayish edema of the macula which may vary from the faintest haziness of the macula with loss of foveal reflex to a disciform, sharply outlined, flat, serous detachment of the macula. As the edema subsides there is a redistribution of retinal pigment giving a mottled and irregular appearance to the macular area. Frequently there are numerous discrete, punctate yellowish dots around the fovea. The pigmentary disturbance is followed by a gradual loss of substance in the fovea and the development of a sharply outlined, punched-out, slightly irregular and usually minute hole in the macula.

Visual disturbance in the stage of edema is usually pronounced. This may be followed in the end stages by complete or partial restoration of central vision. There is frequently a permanent residual minute central scotoma, and the incidence of metamorphopsia is high. If used in the early stages vasodilators seem to be of definite benefit. The evaluation of planned psychotherapy, in the few instances in which it was possible to apply it, is difficult, but it seemed to be unusually effective. It must also be borne in mind that the mere fact of hospitalization of these patients was an effective form of psychotherapy. It was uniformly noted that the most complete recoveries were made by those patients who were discovered and hospitalized in the early stages of the disturbance.

At the same time that these cases were being studied ophthalmologically and autonomically, Zeligs[6] was studying a small group of similar cases of central retinopathy in another part of the world. He has recently presented his report of these cases as a psychosomatic study.

RAYNAUD'S DISEASE

Alkan[12] compared neurosis of the capillaries leading to Raynaud's disease to neurosis of the middle and small arteries leading to arteriosclerosis.

Whether or not this represents an extreme psychosomatic viewpoint the fact remains that most authors including Raynaud[13] are agreed that the disease most commonly occurs in young persons with hyperirritable nervous constitutions and that emotional factors are *primary among the causes of the disease and the attacks.*

While the occurrence of the clinical entity described by Raynaud is relatively uncommon, every student of peripheral vascular disturbance has encountered many varieties and degrees of peripheral vasospasm, some of which have been precipitated into typical attacks of Raynaud's disease. *For practical purposes these borderline* cases may be assumed to be identical except for the degree of intensity and duration of the spasm.

Several authors[14] have described attacks of intermittent constriction of the retinal vessels with blurring and even permanent visual loss.

I have reported 2 cases of typical Raynaud disease in both of which there was amaurosis fugax in the initial stages progressing to slight permanent visual disturbance and showing pronounced retinal arteriolar spasm.[5]

It is my opinion that varying degrees of retinal vasospasm may occur in cases which are essentially a pre-Raynaud syndrome and that psychic factors may play a primary role in precipitating the attacks of visual loss associated with true Raynaud disease.

GLAUCOMA

The importance of the psychic factor in glaucoma is recognized by every ophthalmologist. Many authors[15] have cited instances of psychic precipitation of single attacks of acute glaucoma, and almost every ophthalmologist can duplicate these case histories from his own records.

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[10] Horniker, E.: Ueber eine Form von zentraler Retinitis auf angioneurotischer Grundlage, Arch. f. Ophth. **123:** 286, 1929.

[11] Cordes, F. C.: A Type of Foveo-Macular Retinitis Observed in the U. S. Navy, Am. J. Ophth. **27:** 803, 1944.

[12] Alkan, L.: Anatomische Organkrankheiten aus seelischer Ursache, Stuttgart, Hippokrates-Verlag, 1930.

[13] Raynaud, A. G. M.: De l'asphyxie locale et de la gangrène *symetrique des extrémités*, Paris, Rignoux, 1862.

[14] Dunphy, E.: Ocular Manifestations of Raynaud's Disease, Tr. Am. Ophth. Soc. **30:** 420, 1932. Baillert, P.: Un cas de maladie de Raynaud avec lésions vasculaires de la retine, Bull. Soc. d'opht. de Paris, April 1936, p. 296. Anderson, R. G., and Gray, E. B.: Spasm of the Central Retinal Artery in Raynaud's Disease, Arch. Ophth. **17:** 662 (April) 1937.

[15] Inman, W. S.: Emotion and Acute Glaucoma, Lancet **2:** 1188, 1929. Seidel, E.: Ueber die psychische Beeinflussung des intraokularen Flüssigkeitswechsels, Ber. ü. d. Versamml. d. deutsch. ophth. Gesellsch. **49:** 336, 1932.

If it is assumed that attacks of acute glaucoma may be precipitated by psychic shock, is it not also possible, as suggested by Sussmann,[16] that the latent disposition toward glaucoma has its causal basis in the unconscious life?

More and more evidence is being accumulated to show the close relationship between the intraocular vascular circulation, the secretion of intraocular fluid, the level of intraocular pressure and their control by the autonomic nervous system. The susceptibility of the autonomic nervous system to emotional shock is well known.

In the light of present knowledge of the anatomic and physiologic connections of the autonomic nervous system with the higher cerebral centers through the hypothalamus, it is entirely logical to assume that this governing mechanism in the maintenance of a constant level of intraocular pressure, vulnerable as it is to psychic disturbance, may thus directly affect the delicate balance of the intraocular pressure.

Certain it is that there are many aspects of glaucoma which cannot be explained by the old mechanical theories of aqueous drainage.

I have recently studied 2 cases of chronic simple glaucoma which illustrate this emotional control of intraocular pressure.

A man 52 years of age complained of periodic dull ache in both eyes, occasional attacks of blurred vision and typical halos around lights. Examination revealed corrected visual acuity of 20/20 in each eye, but the tangent screen field for the 2/2000 isopter showed a baring of the blind spot at the upper pole in one eye and a double Bjerrum scotoma in the other. The heads of the optic nerves showed a moderate central cupping which was not diagnostic. The intraocular pressure was 28 mm. (Schiötz). The patient was apprehensive, nervous and easily annoyed by relatively slight deviation from his accustomed routine. It was decided to observe this patient without medication, and he was reexamined five days later after a week end at home during which he had been considerably upset by an overnight visit by his daughter and her two small children. The observations were the same except that the intraocular pressure was 35 mm. in the right eye and 38 mm. in the left eye (Schiötz). The patient was given a 1 per cent solution of pilocarpine for use four times a day, and the following Thursday the pressure in each eye had dropped to 20 mm. of mercury. On the next week end, under the same regimen, and again with the nervous tension induced by his grandchildren, the intraocular pressure in one eye had risen to 28 mm. of mercury and in the other to 32 mm.

For some time this patient was observed, and a close record was kept of his daily habits. On two occasions the miotic was discontinued, and the resultant rise in intraocular pressure, without emotional stimuli, was less than that seen while the patient was using the miotic but was subjected to relatively mild psychic stress. The patient himself was apparently completely unaware of any psychogenic factor which might affect his daily intraocular pressure curve, and most of the details regarding this were obtained from his intelligent and cooperative wife. With a realization of the effect of psychic trauma on this patient's glaucoma, a careful regulation of his way of life has effectively maintained, with a minimum use of miotics, a consistently normal intraocular pressure.

A much more dramatic instance of psychogenic causation in glaucoma is seen in the case of a 57 year old psychoneurotic woman who when first seen already had well advanced glaucoma, was almost blind in one eye and had broad double arcuate scotoma and nasal step in the other. The intraocular pressure on first examination was 60 mm. in the right eye and 52 mm. in the left (Schiötz).

The patient was almost hysterical in her attitude, at first refusing to allow her intraocular pressure to be measured. The heads of both optic nerves showed deep cupping with partial atrophy.

With the cooperation of a psychiatrist she finally consented to the use of miotics and at various times pilocarpine, physostigmine, prostigmine, carbamylcholine chloride and even di-isopropyl fluorophosphate were tried but without demonstrable effect on the pressure, which remained elevated to between 50 and 60 mm. of mercury (Schiötz). In the meantime the remaining visual field became rapidly reduced in size. The slightest exhibition of anxiety or pessimism on the part of the physician or her husband would produce a fit of hysterics which might last most of the night, and on each occasion the intraocular pressure would promptly rise from 10 to 15 mm. of mercury and then subside to the original level when the emotional outburst was over.

On the first mention of surgical intervention the pressure in the better eye rose to 70 mm. of mercury within a two hour period.

The emotional crisis precipitated when the patient was finally convinced that her choice was either operation or blindness was so severe that the condition approached an attack of acute congestive glaucoma, and it was necessary to perform a basal iridectomy with preliminary posterior sclerotomy and deepening of the anterior chamber by injection of isotonic solution of sodium chloride. Up to this time the patient had been undergoing active psychotherapy, which in the interim between attacks of hysteria seemed to have more effect in maintaining a minimum intraocular pressure than any other means at hand.

For approximately twelve days after the operation the intraocular pressure was normal. It then began to rise again until finally it was as high as before. There was practically complete absence of anterior chamber, and again the use of miotics and further psychotherapy were of no avail.

A second operation, this time an iridencleisis, was performed with almost identical results as with the iridectomy.

At the present time the patient is practically blind with a field of vision limited to about 1 degree at fixation.

While it is true that in this case psychotherapy was no more successful than miotics or surgical intervention, the striking observation was repeatedly made that emotional shock was directly instrumental in producing abnormal rises in intraocular pressure. The chronic psychoneurosis may well have been the chief causal factor in the original predisposition toward glaucoma.

It is not the purpose of this paper to advocate the thesis that glaucoma is a purely psychosomatic disorder or to prefer psychotherapy over all other forms of treatment in glaucoma. It is felt, however, that psychic trauma may be an important causal factor in many cases of glaucoma and that its recognition will eventually lead to a more rational and complete therapy.

OCULAR MANIFESTATIONS OF HYSTERIA

Articles on hysterical amaurosis, amblyopia, ophthalmoplegia, asthenopia and allied ocular manifestations of purely psychic origin are legion.

In some respects these conditions cannot properly be classified as psychosomatic disorders, and in any case it is not within the scope of this paper to recapitulate their endless variety.

In a review of the literature, however, several glaring fallacies repeat themselves so frequently as to demand correction or at least a challenge.

A vast majority of cases reported as hysterical amblyopia are diagnosed per exclusionem. After a thorough ocular examination has failed to reveal an organic cause for the visual loss the condition is labeled "hysterical" by virtue of the purely negative result. Seldom is any attempt made to determine in a positive sense the existence of hysteria. Psychiatric evaluation is rarely attempted except as a last resort in cases of extremely stubborn or prolonged and almost hopeless cases.

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[16] Sussmann, R.: Psyche und Auge, Klin. Monatsbl. f. Augenh. **81:** 103, 1928.

The amenability of hysteria to suggestion is so well known as to need little comment, and the use of galvanic current, sham roentgen rays and anesthesia are repeatedly reported. I have been guilty of the use of sham spinal puncture to "cure" an hysterical amaurosis. The occurrence of hysterical amblyopia in children is much commoner than is generally supposed, and here the susceptibility of the patient to suggestion is particularly noteworthy. In 4 cases of visual loss in children under 14 years of age the rather exhaustive routine of a thorough examination of the eyes, in an attempt to determine the cause of the visual loss, carried so strong an element of suggestion that during the procedure the vision gradually improved and the diagnosis was thus established.

As has been pointed out by Janet[17] and Freud,[18] suggestion is the most important factor in the treatment of hysteria, and this applies equally to ocular hysteria. It must be remembered, however, that in the majority of instances a "cure" by suggestion is only transient.

It should be emphasized that hysterical anxiety with conversion phenomena is the manifestation of a higher psychologic mechanism. Unless this fact is recognized a rational therapy is impossible. The removal of the symptom of blindness (and this is all that suggestion can accomplish) may do more harm than good unless accompanied by effective psychotherapy.

There is hardly a sign or symptom of organic disease which hysteria cannot simulate. The more commonly encountered ocular manifestations of hysteria are amaurosis, amblyopia, photophobia, ophthalmoplegia externa and blepharospasm. Frequently several of these symptoms are seen in the same patient.

To establish a diagnosis of these symptoms as hysterical in origin one must, by proper psychiatric evaluation, establish the positive diagnosis of hysteria. To treat these patients rationally requires an exploration of the subconscious for an adequate explanation of the repression responsible for the symptom.

SUMMARY

The precision of diagnostic and therapeutic procedure available to ophthalmology has led to a conspicuous neglect of psychic factors in ocular disease.

That prolonged but reversible physiologic disturbance can eventually give rise to irreversible organic disease is no less true in the eye than in other body systems.

The following ocular manifestations of disturbed psychosomatic interrelationships are described and discussed:

1. Ocular manifestations of vasomotor disturbance
    - (a) Amaurosis fugax
    - (b) Migraine
    - (c) Neurocirculatory asthenia
    - (d) Central angiospastic retinopathy
    - (e) Raynaud's disease
2. Glaucoma
3. Ocular manifestations of hysteria

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ABSTRACT OF DISCUSSION

Dr. George S. Campion, San Francisco: The presenting ocular symptom, as Dr. Harrington has pointed out, was a transitory "black-out" in an unusual number of cases. It occurred in periodic epidemics when personnel were to be dropped from classes in a technical training school for scholastic reasons. Personnel failing in a training course were shipped out immediately with a rating of seaman, second class, to get some first hand knowledge of the war, so that it was simple to understand the emotional disturbance which preceded the visual symptoms. Occasionally true migraine would show up in this group, often with the initial attack. The patients with migraine all had good grades up to a certain point and then dropped to the bottom of the class. The threat of failure then precipitated the attack. I saw 1 case of central angiospastic retinopathy in this particular group. I had first seen this patient three months previously because of bilateral acute contagious conjunctivitis, and I had difficulty getting him out of the hospital. He left quietly after two weeks and then came back with a corneal foreign body, which was removed. I went through the same procedure again, arranging for a "G. I. series" and a psychiatric consultation. The latter showed an anxiety neurosis not judged sufficient for a survey with a view to his removal from the service. He reported to duty again after several weeks, and a short time later returned to me with the complaint that his right eye had lost its vision that morning at about 11 a. m. He knew the exact time because he tested his vision twice a day! Examination revealed typical acute central angiospastic retinopathy. He received treatment with all the vasodilators which can be used with safety, including intravenous injections of typhoid vaccine and three sessions with the psychiatrist. The edema subsided in four days, which is the shortest time I have ever seen, but the macula was permanently damaged. The patient was a radio singer in civilian life, and I firmly believe that the attempt to make an aviation machinist's mate out of him caused him to lose the vision of one eye.

Dr. Meyer A. Zeligs, San Francisco: The role which psychodynamic mechanisms play in vasomotor diseases such as Raynaud's disease, migraine and retinal angiospasm, has not been too clearly appreciated by most practitioners. Dr. Harrington has shown how certain types of ocular disturbances, particularly amaurosis fugax and angiospastic retinopathy, have, in the light of psychodynamic principles, become more clearly understood and nosologically alined. Dr. Harrington has pointed out the dynamic relationship between psychic conflict and autonomic instability in patients with these types of ocular disturbance. My own experience in the Navy has borne this out almost exactly. Dr. Harrington and I had been studying these cases among Naval personnel simultaneously in different parts of the world. We later discovered that we had arrived at similar conclusions regarding the role of psychosomatic factors in such persons, particularly in cases of angiospastic retinopathy which had developed in military personnel under the stress of combat. These anxiety or fear states constitute the core about which subsequent psychosomatic reactions characteristically develop. I do not believe that the ophthalmologist can remain content to treat such patients merely by asking them to abstain from smoking or by prescribing some antispasmodic drug to be used when symptoms of retinal spasm occur, or to prescribe such treatment in cases of angiospastic retinopathy, after a central scotoma is already demonstrable and unmistakable organic changes in the retina are visible. Since the psychic disturbances of civilian life are, as a rule, slowly engendered and often date back to early life, persons with ocular disturbances of this type should be given the opportunity of a "preventive" psychotherapy in which defects of personality or neurotic conflicts are dealt with, even though those psychic disturbances may not, from an ophthalmologic standpoint, seem directly related to the presenting ocular disturbance.

Dr. Arthur J. Bedell, Albany, N. Y.: I will, at Dr. Harrington's suggestion, show you what central angiospastic retinopathy looks like. The slides are photographs of the fundus, showing preretinal edema in its various stages. At the onset there is a dark circle with a brilliant convex surface overlying the macula. As the edema subsides, the circle enlarges, until it finally disappears, leaving fine dots of deep pigmentation. This cycle of development was first reported by me in 1928. The cause of the disease is not established. The photographs are shown to supplement Dr. Harrington's excellent paper.

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[17] Janet, P. M. F.: The Major Symptoms of Hysteria, ed. 2, New York, The Macmillan Company, 1920.

[18] Freud, S.: Selected Papers on Hysteria and Other Psychoneuroses, ed. 2, translated by A. A. Brill, New York, Journal of Nervous and Mental Disease Pub. Co., 1912.

Dr. Walter S. Atkinson, Watertown, N. Y.: In the discussion of Dr. Harrington's interesting paper, it might be appropriate to report the observation of lenticular opacities seen in 3 cases after treatment with electric shock. As Dr. Harrington did not have time to present his whole paper, I do not know whether or not he refers to the type of case in which the treatment with electric shock is used. The lenticular opacities referred to were mostly subcapsular and in the superficial cortical fibers. The ages of the patients ranged in the second and third decades. Two had been examined by me prior to the treatment, and no lenticular opacities had been observed. Two have been under observation for over two years, and the opacities have not increased. The third committed suicide before any progress in the opacities was noted. Since no report in the literature has been found of lenticular opacities following treatment with electric shock, it might seem advisable to have an examination of the eyes with particular attention to the lenses prior to the treatment with electric shock and afterward.

BACITRACIN THERAPY

The First Hundred Cases of Surgical Infections Treated Locally with the Antibiotic

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In May 1943, while searching for evidence of bacterial antagonism in the bacterial mixtures to be found in badly contaminated accidental wounds, we discovered an aerobic gram-positive spore-forming bacillus which produced, in ordinary culture mediums, a powerful antibiotic agent with a wide spectrum of antibacterial activity. When it was found that the active principle was present in the filtrate of the bacterial culture and was nontoxic for laboratory animals, studies were begun on its concentration and purification for the purpose of applying it to the treatment of human infections.

The organism was found in the debrided tissue removed from a compound fracture of the tibia in a 7 year old girl by the name of Margaret Tracey. In her honor the new antibiotic has been named "bacitracin." The crude filtrate was found to inhibit the growth of hemolytic streptococci in the test tube and on blood agar plates. It was also able, when injected subcutaneously, to protect mice against 10,000 or more minimal lethal doses of hemolytic streptococci given intraperitoneally, clearly indicating its ability to diffuse through the animal body from the site of injection to an area of infection. The crude filtrate also was found to have an abortive action on certain local human infections, such as furuncles and carbuncles, when injected into the center of the lesion.

These preliminary observations encouraged us to make renewed efforts to obtain the active principle in a more concentrated form.

We called on Dr. Hans Clarke, professor of biochemistry, for assistance, and he assigned Dr. Herbert Anker of his department to the task. He was able to extract the antibiotic from the crude filtrate with butyl alcohol and obtain a preparation in an aqueous solution which was concentrated a hundredfold. When this was dried an amorphous, slightly yellowish powder was obtained. This hundredfold concentrate was also found to be nontoxic for mice, guinea pigs and rabbits and without any evidence of local irritation or systemic toxicity in man.

The antibiotic was found to have certain properties which have been enumerated in the preliminary report which appeared in the Oct. 12, 1945 issue of *Science*.[1]

Further chemical studies required the availability of a larger quantity of the antibiotic than could be produced in the laboratory. One of the commercial firms attempted to produce it on a larger scale but at once ran into production difficulties and after working on it for a year gave up the attempt. At that point another firm, the Ben Venue Laboratories of Bedford, Ohio, took up the problem and after six months preliminary study began to produce small test samples of active material. These lots varied considerably in color, solubility and toxicity, but it was found that they could be used in dilute solution and in ointment bases for the treatment of localized surgical infections. During the last three months a preparation has been available which is highly soluble and of low toxicity. This is now going through the final stages of pharmacologic testing, and it now seems safe to try it out, with caution, systemically on generalized infections.

This paper presents the results which have been obtained in a series of 100 surgical infections treated during the last three years. The first 6 infections were treated with the crude filtrate from the culture of the bacillus which produced the antibiotic. The next 30 infections were treated with the concentrated and partially purified product prepared in the laboratory of biochemistry by Dr. Anker. The remaining 64 infections were treated with material furnished by the Ben Venue Laboratories of Bedford, Ohio. The product has been steadily improving in potency, in solubility and in the decrease of its toxicity.

METHOD OF STUDY

One of us has pointed out in a previous communication the difficulty of evaluating any drug in the treatment of surgical infections, many of which respond satisfactorily to the surgical procedure or even resolve spontaneously without the use of drugs.[2] This is true with respect to the drainage of an abscess or the resolution of a furuncle. However, it can be said without great fear of contradiction that a drug is of value in the treatment of surgical infections if it obviates the need for surgical incision in a condition wherein it is almost invariably required to effect a cure, if it permits a less extensive surgical procedure than would ordinarily be required, if it definitely shortens the healing time or if it permits a primary closure or a secondary closure earlier than would customarily have been successful without the use of the drug. Sometimes it is difficult to be sure that the drug meets one or more of the criteria in any given case.

The effect of the drug is even more impressive if it can be demonstrated that the causative organism has been eliminated from the area of infection promptly

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1. Johnson, B. A.; Anker, H., and Meleney, F. L.: Bacitracin: A New Antibiotic Produced by a Member of the B. Subtilis Group, Science **102:** 376-377, 1945.

2. Meleney, F. L.: The Difficulty of Evaluating Drug Treatment in Surgical Infections, J. A. M. A. **124:** 1021-1026 (April 8) 1944.

following the administration of the antibacterial agent. These criteria of the benefit of a drug in the treatment of surgical infections have all been met by penicillin and in a much more limited sphere by the sulfonamide compounds. These criteria have also been applied to the present series of cases of infections treated with bacitracin.

In some instances it has not been possible to obtain a culture of the causative organism, but for the most part a bacteriologic study has been initiated before the beginning of treatment and in many cases cultures have been taken frequently during the course of treatment. The results have been classified in a manner similar to that which was used for the study of penicillin in surgical infections, a report of which appeared in the November 1946 number of the *Annals of Surgery*.[3] The result was called "excellent" if there was a prompt and unmistakable response and a rapid resolution of the infective process within seventy-two hours. The result was called "good" if there was an unmistakable response to the drug over a longer period, generally a week or ten days. The result was called "questionable" if one could not be certain whether the infection might not have healed just as well without use of the drug. The result was listed as "no effect" if the infection went steadily on its way despite the use of the drug. The first two groups of results have been called favorable and the last two unfavorable.

Among the cases of surgical infections treated with penicillin and reported in the paper previously mentioned there were 142 cases in which patients received local treatment. The two series are not strictly comparable, although they cover a similar range of surgical infections. In both series the great majority of infections responded favorably, clearly demonstrating that both of these agents are of value in the local treatment of infections.

These are not selected cases. They represent the ordinary run of infections which are seen in any surgeon's office or in the surgical clinic of any hospital. The majority of patients were ambulatory, while some required hospitalization. The earlier cases of surgical infection were treated at the same time that similar lesions were being treated locally with penicillin. In many of these cases the lesion had been treated unsuccessfully with the sulfonamide drugs or with penicillin, and the organisms had been found to be either resistant or antagonistic to these drugs. It can be said that in the past year in our hands bacitracin has almost completely replaced penicillin in the local treatment of these infections, and yet a few of those in which bacitracin failed to effect a cure have responded to the subsequent administration of penicillin. These cases of infections occurred in 54 men and 46 women. Twenty-four patients were under 20 years of age, 32 between 20 and 40 and 44 over 40. Eighty-four infections were considered serious, and 16 were relatively minor. Seventy-five were acute, of less than thirty days' duration, 22 were chronic and 3 were acute exacerbations of a chronic infection. Twenty-nine infections had previously had some other form of treatment, while 71 were treated primarily with bacitracin.

Bacitracin was administered in two forms, one in an aqueous solution and the other in a water-soluble ointment base. The vehicle chosen was the one most suitable to bring the agent into closest contact with the infected tissues. Fifty-seven infections were treated only with the solution, 32 only with the ointment and 11 with both. Furuncles, carbuncles and deep and superficial abscesses received an injection of the solution into the center of the lesion. The first injection often caused a burning sensation which lasted a short while, but this was seldom as acute with subsequent injections. It was probably due in part to the increased tension of the inflamed area. There was never any evidence of local irritation or toxic absorption from these injections. If pain is encountered procaine hydrochloride may be added, for it does not inhibit the effect of bacitracin. Such open lesions as ulcers were generally treated with the ointment. The solution has the advantage of permitting injection into the inflamed tissue. The ointment has the advantage of longer retention of the active agent and its slower diffusion.

The aqueous solution used in these treatments was of varying strength. The earlier infections treated with the filtrate or the concentrate made in our own laboratories varied from 2 units to 400 units per 1 cc. The superiority of the most concentrated solution was demonstrated when 2 similar lesions in the same patient were treated, 1 with the 400 unit solution and the other with a 5 unit preparation. The commercial preparations were generally used as 10 unit or 100 unit solutions, and in the latter half of the study the stronger preparations were almost always used. The amounts injected varied from 0.1 to 5.0 cc., depending on the size of the lesion.

The ointment base is made up with 45 parts of Carbowax 4,000 and 55 parts of propylene glycol.[3a] These two glycols are mixed together and sterilized by dry heat at 140 C. for two hours. When they have cooled almost to the point of solidification the antibacterial agent is added. This base may be kept soft in the incubator and thus be ready for the addition of the medicament. This water-soluble base may be used as a vehicle for penicillin and the sulfonamide compounds as well as for bacitracin. The ointment should be kept in the ice box when not in use because the bacitracin will deteriorate after a few days at room temperature, but it will remain active at ice box temperature for six months or a year. This ointment base in these proportions melts at body temperature and when removed from the ice box spreads readily on fine meshed gauze or china silk, which is then applied to the lesion to be treated. In some cases the dressing has a slight tendency to stick to the wound surface. This may be obviated by overlaying the inner dressing with a layer or two of gauze impregnated with zinc oxide. It is possible that this ointment base may be improved by the addition of a small amount of Aquaphor[4] or a similar compound to the mixture, to minimize sticking and to prolong the action of the antibiotic, but the ointment as described is sufficiently satisfactory to warrant extensive trial. Since it is water-soluble, the medicament passes readily from the vehicle into the tissues in contact. Some of the vehicle is also absorbed, and whatever is left may be easily washed from the wound with a solution of sodium chloride.

The organisms obtained on culture of material from these infections were almost invariably tested for sensitivity or resistance to both penicillin and bacitracin. Careful records have been kept on all these cases, and the essential data have been transferred to summary sheets similar to those used in the study of penicillin mentioned heretofore.[3] The items that have been particularly studied and are reported herewith are the diagnosis, the duration of symptoms before treatment, the previous treatment, the duration, dosage and method of bacitracin treatment, surgical procedures, secondary methods when necessary, bacteriology (including susceptibility tests), clinical response and end results.

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[3] Meleney, F. L.: Penicillin in the Treatment of Established Surgical Infections, Ann. Surg. **124:** 962-980, 1946.

[3a] Furnished by the Union Carbide and Carbon Company.

[4] Aquaphor (Duke Laboratories, Inc.) is a base consisting of 6 per cent of a group of esters of cholesterol (chiefly oxycholesterol) in an aliphatic hydrocarbon (petroleum) base.

PRESENTATION OF DATA

Diagnosis.—The list of surgical infections by name and the results obtained are given in table 1. The commonest lesion was the single furuncle, and it is seen that the results were all favorable. In every instance the bacitracin was injected into the center of the lesion with a sharp needle in 0.1 to 0.2 cc. quantities once a day for two to five days. The excellent results were for the most part abortive, the good results represent cases in which central slough had occurred that required separation. In the deep and superficial abscesses the infections were much more serious, with more necrosis of tissues and purulent exudate. They required larger doses (1 to 5 cc.) and a little longer to clear, but even so all the results were favorable. Sebaceous cysts and infected operative wounds had other factors which delayed their response. The cases represented in the minor categories are of interest, but the numbers are too small for us to be sure that they are entirely representative.

When the group is taken as a whole, the 88 per cent of favorable responses compare favorably with the 70 per cent obtained by the local use of penicillin in the similar but not entirely comparable group of infections reported previously.[3] These cases as a group may have been less serious than the series treated locally with penicillin.

The "Excellent" Cases.—Of particular interest in this study are the cases in which the bacitracin either gave a strikingly rapid response (a so-called "excellent" result) and those cases in which there was obviously no effect or in which it was of doubtful value. The 31 cases in this group seem to demonstrate clearly that this drug may be expected to stop promptly the progress of certain surgical infections. The substantiating evidence is both subjective and objective. A prompt response often surprised the patient either because of the sudden relief of suffering or the obvious difference between the behavior of the lesion so treated and that of one in some comparable previous experience. The physician's observation of certain of these cases was often rewarded by a prompt subsidence of swelling, redness and exudate or the rapid resolution of the infection, which he had expected would require an incision. While the experienced surgeon may recall particular cases in which infections have responded promptly to a surgical procedure, such cases represent the exception rather than the rule. It is perhaps the frequency of the prompt response to bacitracin which is most significant. A brief descriptioin of certain of these cases will illustrate these points.

One patient with a large indurated and inflamed abscess of the face and another with a deep abscess of the chest wall felt so much better after one injection that they did not think it necessary to come back the next day for treatment. On the third day when they returned the lesions were quiescent.

In several cases of furuncle, bacitracin seemed to hasten the separation of the slough, and frequently with the core out, the lesion would be closed the next day.

Three patients had a diffuse infection of the anterior closed space of the distal phalanx of the fingers, a condition almost always requiring incision. An injection of bacitracin directly into the anterior closed space caused a subsidence of the inflammation without any drainage in 2 of these, and in the other patient injection of the drug was made through a small opening in the skin where the infection was pointing. The finger promptly ceased to throb. The patient was told to soak the finger every two hours if it pained. Only one soaking was necessary. The opening sealed over during the night. A tiny drop of the pus came out next day when the seal was removed. A second injection of bacitracin was administered, and on the following day the swelling was all gone. In all 3 cases it is presumed that there was a minimal amount of necrosis and a maximum amount of cellulitis when the treatment was inaugurated.

TABLE 1.—*Results Obtained in the First Hundred Cases of Surgical Infections Treated by the Local Application of Bacitracin*

Diagnosis	Total Cases	Results of Treatment: Excellent *	Good *	Questionable	No Effect
Furuncle (boil)	16	8	8	0	0
Deep abscess	13	4	9	0	0
Superficial abscess	10	3	7	0	0
Infected sebaceous cyst	9	0	8	1	0
Infected operative wound	9	4	5	0	0
Multiple furuncles	6	0	4	2	0
Carbuncle	4	1	3	0	0
Undermining ulcer	4	0	4	0	0
Subungual abscess	4	2	2	0	0
Chronic osteomyelitis	3	0	1	1	1
Ulcer of old scar	3	0	2	1	0
Sty	3	3	0	0	0
Infected accidental wound	2	1	0	1	0
Ulcer of leg	2	0	1	1	0
Ulcer of vulva	2	0	1	1	0
Impetigo	2	2	0	0	0
Miscellaneous (1 each)	8	3	2	1	2
Total	100	31	57	9	3

* Favorable results in 88 per cent of cases.

One of these patients was the son of the senior author. He was discharged from the Navy with six small ulcers on the legs, arms and buttocks. Culture revealed a hemolytic streptococcus which was susceptible to both penicillin and bacitracin and a coagulase-positive staphylococcus which was resistant to penicillin but susceptible to bacitracin. The multiplicity of these lesions gave the opportunity to compare the results obtainable with penicillin and bacitracin, and it was obvious that in every instance the bacitracin-treated ulcers lost their exudate and healed faster than did the penicillin-treated ones.

One patient was the son of a professor of bacteriology in one of the southern medical schools. He brought the patient to the office with an active infection around an ingrowing toenail. The excessive portion of the nail and its matrix were excised, and the wound was left open and dressed with bacitracin ointment. When seen two days later the inflammation had subsided and the wound was clean, and after two more days the wound had closed itself and looked as if it were healing by primary union.

Two cases of impetigo were treated by the removal of the crusts and the application of bacitracin ointment, with almost immediate cessation of inflammation and exudation.

Treatment of several patients with sties required nothing more than bacitracin solution dropped in the eye. One of them, however, received an injection into the center of the lesion. Incidentally, it may be stated that several cases of conjunctivitis due to staphylococci responded to administration of the drug within twenty-four hours. Bacitracin caused no irritation of the conjunctiva.

A number of serious infections above the danger line of the face which, if untreated, frequently go on to orbital cellulitis or cavernous sinus thrombosis promptly responded to the injection of bacitracin. This was particularly striking in the case of an abscess below the lower lid near the outer side of the left eye. There was an area of redness and induration pointing in a triangular fashion toward the inner canthus of the eye. Twenty-four hours after the first injection this pointing triangle had receded and the danger of invasion of the boy's cranium was past.

A patient who had swallowed a broken knitting needle three years previously, in an attempt to commit suicide, came into the hospital with the foreign body penetrating the abdominal wall. It was readily removed, and the wound was closed without drainage. A collection of seropurulent fluid developed, which was aspirated and yielded on culture a nonhemolytic streptococcus which was resistant to penicillin but susceptible to bacitracin. A solution of 2 cc. of bacitracin containing 100 units per cubic centimeter was injected into the cavity. The fluid did not reaccumulate, and it was not necessary to open the wound for drainage. The whole process promptly subsided.

Another patient came in for treatment of a deep abscess of the cheek which was about 4 cm. in diameter and contained a number of anaerobic organisms. The infection promptly subsided following aspiration of the pus and the injection of 100 units of bacitracin on two successive days. The swelling was all gone on the fourth day, and the need for surgical intervention was obviated.

There were several patients whose subungual abscesses responded when the undermined portion of the nail was removed and bacitracin in Carbowax ointment was applied. In these cases the infection did not spread any farther under the nail, and the complete removal of the nail which is usually required was unnecessary.

An infected sebaceous cyst of the cheek promptly subsided, and when the patient came in later for the removal of the cyst no evidence of it could be found. In several other cases it was possible to excise the cyst soon after the subsidence of the acute inflammation. In 3 instances it was possible to do a primary suture of the skin after the excision of the infected cyst and the wound healed by primary union in spite of the recent infection. Bacitracin was mixed with the procaine hydrochloride used for the local anesthetic in 1 of these cases.

In 1 case the donor site, five days after the removal of a dermatome graft, revealed a diffuse inflammation and an exudation all over the surface. Twenty-four hours after the application of bacitracin ointment there was no exudate and the surface was dry; healing progressed rapidly thereafter. Such an area permitted a satisfactory contact between the ointment and the infected surface. So much for the "excellent" results.

The "Questionable" Cases.—The 9 cases in which results were "questionable" include 1 of multiple furuncles of the axilla from which a mixture of organisms was cultivated, including Escherichia coli which was, of course, resistant to bacitracin. Proper contact of the medicine was also questionable in this old scarred lesion. Another was a case of varicose ulcer of the leg which repeatedly yielded no growth on culture but remained inert for months, the patient refusing surgical intervention. A third was an infected contusion and laceration with gangrenous skin and subcutaneous fat undermined with a mixture of organisms, including Esch. coli and a strain of Aerobacter. After the removal of the gangrenous tissue the wound healed slowly. A fourth was a case of multiple infected sebaceous cysts. Some of these subsided with bacitracin therapy, while others did not.

Two patients with multiple furuncles of the face did not obtain good results from the local application of bacitracin ointment. Some improvement occurred at first, and then it came to a standstill. There was improvement again after the substitution of penicillin ointment.

A decubitus ulcer over the tuber ischiadicum in a case of cord injury yielded on culture a mixture of a coagulase-positive staphylococcus, a nonhemolytic streptococcus, Proteus vulgaris, and an unidentified gram-negative bacillus. It was difficult to avoid pressure on this area. The ulcer gradually closed, and improvement was a little more rapid when 0.25 per cent parachlorophenol was added to the bacitracin ointment to minimize the activities of the gram-negative bacilli; however, the lesion did not completely heal during a period of six months' observation.

A chronic osteomyelitis of the ilium with a small draining sinus yielded on culture a coagulase-positive staphylococcus which was resistant to penicillin but susceptible to bacitracin and a Bacillus subtilis which was resistant to bacitracin but susceptible to penicillin. After the instillation of bacitracin the staphylococci disappeared from the culture; but P. vulgaris and Esch. coli both appeared in later cultures, and the sinus has remained open. There is probably bare bone at the bottom of the sinus, and healing may have to await the expulsion or removal of a sequestrum.

A chronic ulceration of the vagina yielded a mixed culture of organisms which were resistant to bacitracin, including a coagulase-positive staphylococcus, a hemolytic streptoccoccus and P. vulgaris. At first there seemed to be a favorable response to bacitracin therapy, but the improvement came to a standstill. It has recently responded better to a mixture of penicillin and parachlorophenol in the Carbowax base.

The Frank Failures.—In the 3 cases in which there was no evidence of favorable effect one finds a probable explanation for failure.

In the case of acrodermatitis continua of the finger which had been present over two years a staphylococcus was found which was resistant to bacitracin. A fungus belonging to the Mucor group gradually grew out from the culture. There was no response to bacitracin therapy.

In the second case a sacrococcygeal abscess, when cultured, revealed gram-positive and gram-negative pleomorphic anaerobic rods and a gram-positive anaerobic coccus, all of which were resistant to bacitracin. This abscess had to be opened thoroughly, and it then responded to dressings of zinc peroxide.

The third patient had a chronic osteomyelitis of the tibia. A previous lesion in the opposite leg, which had been successfully operated on some months before, had healed with the aid of bacitracin. A cavity of the bone with a sequestrum was excised, and bacitracin solution was applied on a silk tampon. The organism was susceptible to bacitracin, but a purulent exudate appeared daily in the wound and it was obvious that there was infection going on in the bone out of reach of the locally applied medicament. Bacitracin was not then available for systemic administration. Inasmuch as the organism was also susceptible to penicillin, the treatment was changed to the local and systemic administration of that antibiotic. Exudation promptly diminished, and subsequently a half dozen or more tiny sequestrums were separated from the surface. Granulations then grew up, and it was possible to successfully transplant skin grafts.

Duration of Infection.—When the cases are divided according to the duration of symptoms before the initiation of treatment it is noted that all infection treated in the first three days gave a favorable result, while the unfavorable responses began to creep into the groups with a longer history. These results are shown in table 2. In fact it is seen that in the first two categories the "excellent" results exceeded the "good," while even in the third the results began to be less brilliant. Most of the unfavorable results came in those cases in which the infection had persisted long enough for a breakdown of tissue or other physiologic disturbances or for secondary contaminations of the wound with resistant organisms to play a part.

The infections of 66 patients were treated for less than eight days, and most of them responded in that time. Thirteen were treated from eight to fifteen days and 11 from fifteen to thirty days. Ten received the antibiotic for a month or more.

With regard to total dosage, 60 received less than 100 units of the bacitracin. The unit has been established tentatively as that amount of bacitracin which can be diluted 1,024 times and still inhibit the growth of 0.1 cc. of a 1:100 dilution of an eighteen hour culture of our stock strain of hemolytic streptococci (representing about 1 million organisms) when planted in 2 cc. of culture medium. An adequate dosage of bacitracin for the control of any infection will vary with each case. It would seem reasonable to start with a concentration of 100 units per 1 cc. of solution or 1 Gm. of ointment.

Bacteriology.—The bacteriologic study of these infections is of particular significance. It is naturally of the utmost importance to determine if possible the bacterial flora of any infection or at least to make cultures before beginning treatment. In some cases this is either impossible or inadvisable, for example, in the early stages of a cellulitis or a furuncle or in a deep-seated infection. But when it is not done, the surgeon is working in ignorance of the pathologic agents with which he has to deal and of their susceptibility or resistance to the antibacterial agent he wishes to employ. Thus he cannot be sure which is the best one to use and may lose time in bringing the infection under control. Later cultures may of course reveal those organisms which have primarily resisted or have developed a resistance against the antibacterial agent employed, and appropriate measures can then be taken secondarily. But this is not the best method of treatment. The surgeon who attempts to treat infections without having the facilities of a laboratory at his disposal is working completely in the dark, depending on his experience and to a large measure on chance.

We regret that no cultures were obtained before the administration of bacitracin in 10 of these cases. Five of these infections were furuncles, 2 were sties, 1 was a deep abscess and in 2 there was faulty handling of the specimens. However, the results in these cases closely parallel those obtained in the group in which cultures were taken.

Table 2.—*Results of Bacitracin Therapy According to the Duration of the Illness Before the Initiation of Treatment*

		Results of Treatment			
Duration of Symptoms, Days	Total Cases	Excellent	Good	Questionable	No Effect
1	5	3	2	0	0
2	16	10	6	0	0
3	13	3	10	0	0
4 to 7	30	12	16	1	1
8 to 15	6	0	5	1	0
16 to 30	5	2	3	0	0
Over 30	25	1	15	7	2
Total	100	31	57	9	3

Table 3.—*Results of Bacitracin Therapy According to the Bacteriology of the Lesions*

		Results of Treatment			
Bacteriology	Total Cases	Excellent	Good	Questionable	No Effect
Hemolytic str.					
Pure	1	0	1	0	0
Mixed	6	3	3	0	0
Nonhemolytic str.					
Pure	2	1	1	0	0
Mixed	17	4	9	4	0
Coag.-positive staph.					
Pure	30	11	17	1	1
Mixed	24	9	12	3	0
Coag.-negative staph.					
Pure	6	1	5	0	0
Mixed	23	7	13	2	1
Gram-positive aerobic rods					
Pure	2	0	2	0	0
Mixed	15	3	11	1	0
Esch. coli					
Pure	0	0	0	0	0
Mixed	3	0	2	1	0
Proteus vulgaris					
Pure	0	0	0	0	0
Mixed	5	0	3	2	0
Other gram-negative aerobic rods					
Pure	0	0	0	0	0
Mixed	7	0	4	2	1
Anaerobic and microaerophilic cocci					
Pure	1	0	1	0	0
Mixed	12	4	6	1	1
Anaerobic bacilli					
Pure	1	0	0	0	1
Mixed	4	2	2	0	0
Culture not obtained	10	4	4	2	0

Of the other 90 cases pure cultures were obtained in only 43. In all the other lesions two or more organisms were present. The results are shown in table 3. It is of interest that only the coagulase-positive staphylococcus appeared more often in pure cultures than in mixtures. The gram-negative bacilli were always associated with other organisms. Not all the organisms found were necessarily pathogenic, but it is known that nonpathogenic organisms are of importance in preventing healing when they are in symbiosis with pathogens or are present in tissues which have necrotic elements or a deficient supply of blood. Furthermore they often have the power of inactivating penicillin. The well known producers of penicillinase do not inactivate bacitracin, and it is for this reason that the latter agent may be more effective in the treatment of mixed infections. Possibly some bacteria will be found which will inactivate bacitracin, but so far this has not been observed.

In tests of the recovered organisms for susceptibility or resistance to both penicillin and bacitracin it was found that most of the cocci were susceptible to both and a few were resistant to both, while a fair number were susceptible to one and not to the other. These results are seen in table 4. Where there was a difference it is apparent that the organisms were more often susceptible to bacitracin than to penicillin, thirty to six, to be exact, or a ratio of 5 to 1. This suggests that if these cases of surgical infection had all been primarily treated with penicillin instead of with bacitracin the results would not have been as good because fewer of the organisms would have been susceptible, and with the added factor of penicillinase production (without any bacitracinase yet demonstrable) the response to penicillin might have been somewhat less satisfactory. It is generally agreed that as time goes on more and more penicillin-resistant strains will be found which belong to species that are generally susceptible. This fact stresses the importance of discovering and developing as many new antibiotics as possible so that we will have many strings to our bow in the fight against infection.

TABLE 4.—*Susceptibility and Resistance to Bacitracin and Penicillin of Certain of the Bacteria Cultured from the Lesions*

Bacteriology	Bacitracin S. Penicillin S.	Bacitracin S. Penicillin R.	Bacitracin R. Penicillin S.	Bacitracin R. Penicillin R.
Hemolytic str......	4	2	0	0
Nonhemolytic str..	2	11	0	2
Coag.-pos. staph..	42	10	1	0
Coag.-neg. staph..	15	5	5	4
Anaerobic cocci....	10	2	0	0
Gram-neg. bac.....	0	0	0	8

S., susceptible; R., resistant.

It also emphasizes the necessity for a careful analysis of all the bacteria present in any given infection, including a test for susceptibility to a number of antibiotics and antibacterial agents, so that all the organisms active in the infection may be brought under control by the appropriate agent or combination of agents at the earliest possible moment.

At the same time the physiologic factors of general nutrition and local blood supply must not be neglected; any vehicle carrying the agents to the areas of infection, as well as the agents themselves, must be harmless to the tissues, neither directly injuring them nor interfering with their repair.

In many of these cases the response was so satisfactory that there did not seem to be any indication for taking cultures after the causative organisms had been determined. Therefore the time of disappearance of the causative organisms in these cases unfortunately was not known. In 22 lesions the same organisms which were there originally were later found on culture, but in most of these cases the activity of these organisms in the wound was definitely reduced or prevented, so that repair proceeded satisfactorily in spite of the continued presence of living bacteria. In 13 of the cases in which later cultures were taken the principal pathogen disappeared completely from the lesion following the local application of the drug.

In 62 of these cases the need for surgical intervention was obviated. Eighteen infections would unquestionably have required an incision before the days of the antibiotics. In all 88 favorable cases it was clearly evident that the healing time had been shortened.

SUMMARY AND CONCLUSIONS

1. In 100 cases of surgical infections treated locally with the new antibiotic bacitracin a favorable response has been evident in 88 per cent of the patients.

2. These cases represent the general run of localized or localizing infections which are seen every day in any surgeon's office or any hospital clinic.

3. The results have been classified as "excellent," "good," "questionable" and "no effect."

4. The excellent results are those in which the infections treated with bacitracin responded promptly within seventy-two hours, often surprising both patient and physician by the rapidity and completeness of their resolution. Certain illustrative cases in this group have been briefly reported.

5. Cases in which the response was unsatisfactory have generally revealed some explanation for the failure.

6. Bacteriologic studies showed that the majority of surgical infections were due to a mixture of organisms. Of all the organisms found only the coagulase-positive staphylococci were present more often in pure than in mixed cultures.

7. It is extremely important to make a thorough study of the bacteria present in any given surgical infection so that the most potent antibacterial agents may be employed as soon as possible.

8. Most of the aerobic and anaerobic cocci found in these infections were susceptible to both penicillin and bacitracin. Thirty were resistant to penicillin and susceptible to bacitracin. Six were resistant to bacitracin and susceptible to penicillin. A few were resistant to both.

9. None of the gram-negative aerobic bacilli that were tested were susceptible either to penicillin or bacitracin.

10. Bacitracin, like penicillin, will often obviate the necessity for a surgical procedure in certain types of surgical infections.

11. Bacitracin will be of clinical importance only if it can succeed where penicillin or the sulfonamide compounds cannot. Its activity against many organisms of the staphylococcic and nonhemolytic streptococcic groups, which are resistant to these agents, seems to be significant.

12. Furthermore, it is not locally toxic or irritating and is not inhibited by plasma, blood, pus or broken down tissue or by the organisms which produce penicillinase. It may therefore be of value in infections due to bacterial mixtures.

13. The search must be continued for other antibiotics which are nontoxic to the tissues and are potent against those bacteria not susceptible to treatment by the agents now available.

Special Article

HISTORY OF THE AMERICAN MEDICAL ASSOCIATION

MORRIS FISHBEIN, M.D.
Editor, Journal of the American Medical Association and Hygeia, the Health Magazine
Chicago

(Continued from page 613)

(Note.—*Following is the eighteenth chapter of a history of the American Medical Association, in process of development for publication in connection with the celebration of the Centennial of the American Medical Association in Atlantic City in June 1947.*

The general account of the history of the Association will be followed by individual histories of the various councils, bureaus, publications and other activities of the Association. The general account is written by the editor of The Journal. *Each of the other historical contributions will be by a member of the individual council, bureau or agency responsible and now associated with it or directly related to its work. Included will be photographs, signatures and a brief biography of each of the hundred presidents of the American Medical Association. This feature has been prepared by Dr. Walter L. Bierring.*

It will be impossible to publish all of the material in The Journal. *The complete work will be published in book form. It is hoped to have it available by the time of the annual session.*—Ed.)

CHAPTER 18. *Development of the Councils*

1905-1909

THE COMMITTEE ON LEGISLATION

For some time the Association had been served by a committee on medical legislation consisting of Dr. C. A. L. Reed as chairman and Drs. William H. Welch and William L. Rodman. The task of watching medical legislation in Washington and throughout the nation as well was far too great for a committee of this type. The committee had met frequently in Washington; it had established a national auxiliary legislative committee with 2,800 local correspondents. It had established also a national legislative council with representatives of the individual states to agitate whenever action was needed on medical legislation. The legislative council had not met in 1904 because there had not been questions of medical interest before the Congress. The Committee on National Legislation was, however, disturbed at this time because of an executive order issued by President Theodore Roosevelt concerning activities by public officials in their own behalf. This executive order read:

> All officers and employees of the United States of every description serving in or under any of the Executive Departments, and whether so serving in or out of Washington, are hereby forbidden, either directly or indirectly, individually or through associations, to solicit an increase of pay or to influence or attempt to influence in their own interest any other legislation whatever, either before Congress or its committees, or in any way save through the heads of departments in or under which they serve, on penalty of dismissal from the government service.

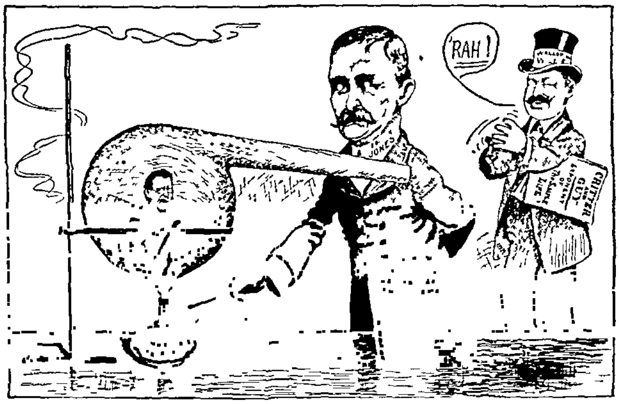
The legislative committee felt that there ought to be more doctors in the Congress and in the Senate. The expenses had been considerable. The committee proposed therefore that it be dismissed and that there be established a Bureau of Medical Legislation to be located in the Association building in Chicago. This bureau would act under the secretary of the American Medical Association and under the supervisory direction of a committee on medical legislation. The report of the committee was referred to a reference committee on medical legislation and political action. This committee concurred in the report. Thus the Bureau of Medical Legislation was established in the headquarters office.

MORE ACTION AGAINST THE PROPRIETARY DRUGS

Again the House of Delegates began to receive resolutions relative to the use of nostrums and proprietary remedies; these came from Missouri and California.

Following the introduction of these resolutions the Board of Trustees made its report. The Board announced to the House of Delegates that the Council on Pharmacy and Chemistry had been organized at a meeting held in Pittsburgh, February 11, with Dr George H. Simmons as chairman and C. S. N. Halberg as secretary. This council had been conducting its work much as it is now conducted up to the time of the annual session in June. Already it had exerted a considerable effect on the acceptance of "patent" medicines for advertising by The Journal of the American Medical Association. The report of the Board of Trustees was referred to a reference committee. The statement of that reference committee, of which Dr. Frank Billings was chairman, is significant. The reference committee said:

THE NIGHT BEFORE—"FAT FREE DIGITALIS"—SO CRUEL



Cartoon from the *American Medical Journalist*, March 1905. Part of the campaign against the formation of the Council on Pharmacy and Chemistry.

> The report of the Board of Trustees on the creation of the Council on Pharmacy and Chemistry is, in the opinion of your committee, the most important and effective measure ever undertaken by this Association to rid the profession of the abuse of the nostrum evil. The personnel of the Council is of such a character as to create a feeling of confidence that the proposed work will be done thoroughly, conscientiously and justly. The publication of the results of the work of the council in book form with annual editions will afford a source of information of inestimable value to the profession.
>
> Therefore we recommend that the House of Delegates indorse the action of the Board of Trustees in the creation of the Council on Pharmacy and Chemistry; that the Trustees be requested to devise a plan through which the Council may be made permanent, and that the Trustees request the Secretary of Agriculture of the U. S. government to give the Council on Pharmacy and Chemistry recognition by authorizing the Bureau of Chemistry to cooperate with the Council in its work

We indorse the work already performed by the Council on Pharmacy and Chemistry in the formulation of rules governing the mode of selection of articles to be investigated and the publication of results already obtained.

We recommend the publication in book form of a list of the preparations not in the Pharmacopeia that are approved by the Council on Pharmacy and Chemistry.

BUDGETS

The minutes of the Board of Trustees for its first meeting in 1905 indicate some of the internecine difficulties. Each time that the editor rejected an advertisement of some proprietary product that had previously been carried there came dire threats of recriminations. The Board of Trustees was, moreover, involved in the purchase of property, with the construction of a new building and with additions to the old building. A separate chapter in this history will be devoted to the story of the gradual development of the headquarters building.

Before the board were the budgets for the councils newly established; these gave much concern to the Board of Trustees in 1905. For instance, the Council on Pharmacy and Chemistry needed $3,000. The sum was granted but with some doubts; today the annual budget of that Council with its various associate councils and laboratory is more than thirty-five times the amount then proposed. The Board of Trustees gave full assent, however, to the rules of the Council relative to the advertising of proprietary products. Then it made the necessary appropriations for a secretary and for an assistant secretary of the Council on Medical Education. The budget of the Council on Medical Education at that time was $750 annually; this has gradually grown to reach more than fifty times the amount required during its first year.

PORTLAND SESSION

At the meeting of the Board of Trustees during the annual session in Portland, difficulties began to develop relative to the employment of the organizer, Dr. J. N. McCormack. The proposal was made to discontinue him as a salaried employee and to reimburse him with an honorarium for each day of service. Dr. McCormack objected to this arrangement and offered either to do the work for nothing or to continue it with the annual honorarium or to discontinue entirely. After reconsideration, the Board of Trustees moved that Dr. J. N. McCormack be reappointed to carry on the work of the Association until the next annual meeting at the same salary as previously.

Now came also for the first time the request to the Association to undertake the publication of a special periodical—the appeal being in this instance from the *Journal of Biological Chemistry*. In proceeding toward the publication of the new directory, the Board of Trustees authorized the purchase of the existing "Standard Medical Directory" for $6,000, and an option had been taken with payment of $750.

THE RUSH MONUMENT

The final and at the same time complete history of the Rush monument appears in the minutes of the House of Delegates for 1905. As has been stated, the turn in its affairs came when the names of Dr. Frank Billings of Chicago, Dr. L. Duncan Bulkley of New York and Dr. William L. Rodman of Philadelphia were added to the committee. They promptly increased its funds to more than $15,000. A site had been obtained for the monument, a bronze statue a little more than life size had been developed and purchased, and the unveiling and dedication took place on Saturday, June 11, 1904 at 5 o'clock. Dr. J. H. Musser, President of the American Medical Association, made a brief address, Dr. J. C. Wilson, chairman of the committee delivered a eulogy, and the President of the United States accepted the monument as a gift of the medical profession to the nation "in a graceful and interesting address." Music was by the Marine Band.

Much easier had been the collection of funds for a memorial to Dr. Walter Reed. Already more than $18,000 was in the hands of that committee.

THE DIRECTORY

When the Board of Trustees reported to the House of Delegates its action relative to the publication of a directory and its purchase of the "Standard Directory," a complaint arose from the Michigan delegation. At that time the most widely used and commercially profitable directory in existence was published in Detroit.

The report of the Council on Medical Education was well received by the House of Delegates. The members of that first council contained names such as might well command respect and admiration. It included Drs. Arthur Dean Bevan, chairman, William T. Councilman, Victor C. Vaughan, Charles H. Frazier and J. A. Witherspoon.

NATIONAL INCORPORATION

Many pages of the activities of the House of Delegates for this year are concerned with the attempt to incorporate the American Medical Association with a national charter. A bill had been introduced into the Congress for the establishment of such a corporation and had been favorably reported with the change, however, of the right to transact business anywhere in the United States to make it definitely a corporation of the District of Columbia. It was suddenly discovered that the amended bill was a very bad bill. Then Senator McComas of Maryland was induced by Dr. William H. Welch to bring out a bill still further revised. This bill was never reported out in the Senate. There was doubt as the constitutionality of such a measure. The committee which had the matter in charge says at one place in its report "This ends the first lesson in the attempt to secure national incorporation of the American Medical Association by a special act of Congress." In any event the report simply ended by referring the entire matter back to the Committee on National Legislation.

By this time Dr. J. N. McCormack was able to report that the plan of organization promulgated by the American Medical Association had been accepted by practically all the states of the Union except Virginia and Maine.

THE SITUATION IN NEW YORK

As a result of serious efforts by Dr. Frank Billings and Dr. J. N. McCormack, who had met from time to time with various representatives of the two medical societies in the state of New York, the time was approaching when New York would form itself into a single state society and become a constituent of the American Medical Association. Dr. E. Eliot Harris of New York reported to the House of Delegates that before the next annual session of the American Medical Association the medical profession of the state of New York would have united, and he asked that a committee be appointed to apportion a proper number of delegates to that state.

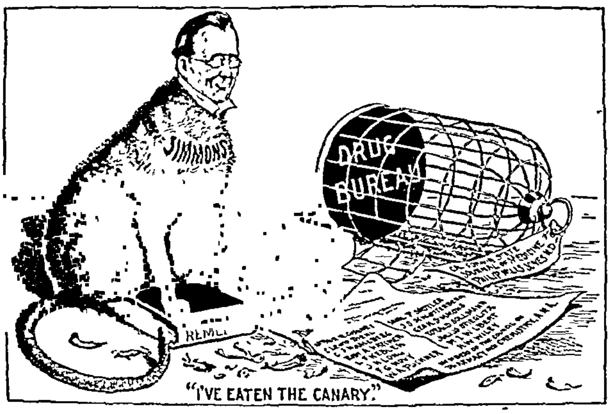
THE "PATENT" MEDICINE EVIL

By this time also many of the great literary publications of the United States, such as the *Ladies' Home Journal, Everybody's Magazine* and *Collier's,* had joined with the American Medical Association in the fight on the "patent" medicine evil. The House of Delegates tendered its thanks for their cooperation.

DR. J. N. MC CORMACK CONTINUED

As the meeting ended in 1905, a resolution was introduced by Dr. Jones of California asking that the present chairman of the Committe on Organization, Dr. J. N. McCormack, be permitted to continue with his work. Dr. McCormack rose in the House of Delegates and made a fine address in which he pleaded for unity and in which he said that suspicion of the trustees and the editor was wholly unwarranted; that all were working together for the best interests of the American Medical Association. By a rising vote Dr. McCormack was unanimously recommended for continuation in his work. As evidence of the intensive drive for increase of membership in the American Medical Association, Michigan increased in this year from 452 to 2,100 members, and Texas from 382 to 2,510 members.

THE MORNING AFTER—"BY-PRODUCTS"—HOW CRUEL


SIMMONS
DRUG BUREAU
CALIFORNIA STATE JOURNAL OF MEDICINE PHILIP MILLS JONES M.D.
REMED
"I'VE EATEN THE CANARY."

Cartoon from the *American Medical Journalist,* March 1905, refers to the establishment of the Council on Pharmacy and Chemistry instead of the Drug Bureau proposed by Dr. Philip Mills Jones.

At this session of the Association, on nomination by Dr. W. L. Rodman of Philadelphia and E. Eliot Harris of New York, Dr. William J. Mayo was elected unanimously to be President of the Association.

MEMORIAL TO DR. N. S. DAVIS

Through a letter from Dr. Henry O. Marcy of Boston a memorial was recommended for Dr. N. S. Davis; Dr. Marcy opened the subscription with the first hundred dollars.

A CHAIRMAN FOR THE HOUSE OF DELEGATES

Dr. T. J. Happel offered an amendment to the effect that the House of Delegates should elect a chairman from day to day with the idea of taking this burden from the President. The proposal was hissed. Again it was felt that this would be an implied criticism of the President, and the proposal was rejected.

THE FIRST OPERATION FOR GALLSTONES

At this meeting there was an exhibit of Mrs. Z. Burnsworth of McCordsville, Ind., who was the first person ever operated on for the removal of gallstones. The operation had been done by Dr. John S. Bobbs of Indianapolis.

1906

BOSTON

In 1906 the Council on Pharmacy and Chemistry came to the Board of Trustees with a proposal that it be supplied with a laboratory in the headquarters office.

THE CRIES OF THE WOUNDED

The meeting of the Board of Trustees in Boston at the time of the annual session in 1906 was an indication of the difficulties that are likely to besiege crusaders at all times and in every generation. The purveyors of "patent" medicines, the quacks and charlatans who were beginning to be damaged by the exposés published in The Journal of the American Medical Association and by the barring of their advertisements from the medical periodicals, the publishers, the editors and those financially interested in periodicals which were profiting by the publication of these advertisements, the owners of medical schools which were beginning to see their investments and their incomes threatened, and the publishers of medical directories who saw for their activities the handwriting on the wall began to seek legal and other means of forcing the Board of Trustees of the American Medical Association and its editor into abandoning their crusading projects. Now came requests from lawyers and from owners of proprietary medical industries and from other agencies for the right to appear personally before the Board to present their cases. Now began to appear also the publication in competing periodicals of articles devoted to vilification, insinuation and prevarication relative to the work of the American Medical Association. The Board of Trustees properly answered these various agencies when they appeared with a legal representative that their legal representative could deal with that of the Association. Others were simply told that investigations would be continued and that the facts would be published.

A headquarters was created for the Bureau on Medical Legislation. Preparations were made for the Council on Medical Education, for the new laboratory and for the Committe on Scientific Research.

The sum of $5,000 was appropriated to the California fund for the benefit of suffering physicians. It will be remembered that California had had either an earthquake or a fire—or both—at that time.

The Committee on Scientific Research was granted $483.28, as it was still conducting a small exhibit.

THE PRESIDENT'S ADDRESS

In the meantime Dr. Lewis S. McMurtry of Louisville, President of the Association, made an important address to the House of Delegates dealing with the affairs of the Association. By this time a pattern was beginning to be established: the address of the President at the Opening General Meeting was for the public and the medical profession and concerned the advancement of medical science. The President made an address to the House of Delegates at its opening meeting dealing with the work of the organization. Dr. McMurtry found it desirable to point out first to the House of Delegates that the Association was not conducted by either the President or the secretary or both but that the great power of the Association was concentrated in the Board of Trustees.

> Under our organization [he said] the Board of Trustees has sole charge of the extensive property and controls all the financial and business affairs of the Association. This Board also has sole control of the disbursement of all funds in carrying on the publications of the Association—to supply funds for standing committees, to direct scientific investigations—and can mold the policy of the Association at will during the interim of the annual sessions. The present prosperous condition of the financial affairs of the Association, the splendid position and high standard of The Journal and the efficiency with which the work of the several standing committees is being prosecuted all compose a superb tribute to the ability, good judgment and professional devotion of the present Board.

Fortunately for the American Medical Association the tribute presented by Dr. McMurtry to the Board of Trustees at that session could be repeated year after year to the gradually changing membership of the Board of Trustees. From time to time movements have been initiated to wreck the Board of Trustees, to disturb its activities and to bring about revolution in the Association through action on the Board. Perhaps it is a tribute to the good sense and good judgment of American physicians that even revolutionists who were elected to the Board, once they became familiar with its problems and responsibilities, became among the most effective of the workers in its membership.

Dr. McMurtry was disturbed also by the possibility that a trustee might be at the same time a delegate and also with the possibility that a member of the House of Delegates might be elected to the office of President or Vice President. He said:

> The Constitution, article 9, section 3, declares "No member of the House of Delegates shall be eligible to the office of President or Vice President." Such a protection of the interests of the Association against undue influence is so just, and the precaution is so necessary, that it needs no comment for proper appreciation. If such doubling of office in one individual is forbidden by the Constitution as to the President and Vice President, how much more essential is it that the same precaution should be prescribed and enforced as to the trustees, whose power and responsibilities are so much greater? I shall have occasion presently to allude to the attacks now being made on the Association's Journal and the Association's management. These attacks, which you will readily recognize as the result of sinister motives and altogether unjustified in fact, are directed toward work entirely within the control and direction of the Board of Trustees. As the strength and influence of the Association grows, and pressing evils are exposed and corrected, such attacks will naturally increase. Under such circumstances the Board of Trustees should command the confidence of the profession at large, all members of the Board should sustain the same relation to this House of Delegates, which selects them, and they should also be on the same footing with each other. Hence I would recommend that the Constitution be so amended that no member of the Board can occupy the double office of trustee and delegate.

Dr. McMurtry then turned his attention to the attacks that were being made on the Board of Trustees and on the editor. In response to these attacks he said:

> So long as the meetings of the American Medical Association consisted almost wholly of section work, with a large general session every day for the adoption of resolutions, with no systematic or persistent work along definite lines, the commendation of the medical press was generally and freely bestowed on the organization. But since the reorganization, when this House of Delegates was established and the membership has increased, and the power of a great organization comes to be intelligently directed toward improving the resources of scientific medicine and advancing the welfare of the profession by organization, certain interests have been interfered with, and the natural course of misrepresentation and abuse has been resorted to by the interests involved. First, and most naturally, The Journal, owned and controlled by the Association and ably edited and published under the direction of the Board of Trustees, was the object of attack and misrepresentation. For years publishing firms have grown rich by the patronage of the medical profession, and these same firms owned medical journals liberally supported by the profession. That the medical profession should own and publish a journal of its own, and that this journal should attain great popularity and influence, has provoked hostile criticism and misrepresentation. That this hostility, abuse and misrepresentation should be directed against the editor of The Journal is natural, since he is in the direct line of fire, and, from one standpoint, is the chief offender. That you may appreciate the ridiculous character of these charges, I would refer you to the leading editorial in the last issue but one of a New York weekly which has for years enjoyed the liberal patronage of the profession and which is owned by a wealthy publisher of medical books. The editorial is entitled "The American Medical Directory." After stating that the issuance of a medical directory by the American Medical Association is absolutely without excuse, although mentioning that the Medical Society of the State of New York had advantageously issued a directory of that state, the editor says:
>
> "The Editor-Secretary has also gone into the business of publishing medical books—he might as well drag the Association into the making of shoes. We do not know who authorized this venture—perhaps the managers will take us into their confidence at the Boston meeting in June—but, whether authorized or not, if the Association publishes books it should give them without price to its members."[1] Comment on this is unnecessary. The allusion to Dr. Simmons and the feigned ignorance of the fact that the publication of a medical directory was authorized by a vote of this House of Delegates at Portland last year shows the unfair methods and animus of the editor who wrote the lines quoted.
>
> But there is another interest which has been offended and which is equally unfair and far more abusive in its attacks on The Journal and the Association. This is the interest of the manufacturers of "patent" and proprietary medicines. This House of Delegates established a Council on Pharmacy and Chemistry, which, with the cooperation of the Board of Trustees, has secured the services of expert chemists and pharmacists to analyze the various nostrums and proprietary medicines in popular use. Many remedies, widely advertised under a plausible name, were found to be composed of cheap and familiar drugs and sold at a ridiculously high price. The Board of Trustees, by direction of this House of Delegates, excluded from the advertising pages of The Journal all preparations which did not make public with the advertisement the formula showing accurately the composition of the products advertised. Many of these manufacturers of proprietary medicines have grown rich, and they saw here a serious menace to their interests. Their avenue of assault is through the editorial columns of the medical journals they have subsidized, and their press committee has been very active of late. Here, as in the instance I have cited from the medical publishers, the editor of The Journal is made the special object of abuse and criticism. In the meantime, the editor's unpardonable offense is that he is doing his duty faithfully, as he is appointed to do, and at all times under the direction of this House of Delegates.
>
> The far-reaching labors of the chairman of your committee on organization, Dr. J. N. McCormack, which have done so much to build up this great organization, have likewise brought on that distinguished physician a goodly share of unjust criticism and abuse.
>
> These attacks on the Association, its work and its officers, abound with allusions to "clique" and "ring" in the organization, which "clique" and "ring" is alleged to be surreptitiously

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[1] I would state that the weekly New York journal quoted here is not the New York Medical Journal, edited by that veteran medical editor and scholar Dr. Frank P. Foster.

and treacherously running the affairs of the Association. I know not to whom these epithets are intended to apply, but this I do know, that there is no officer or board or committee of the Association which is not directly created by this House of Delegates. Hence, if there be a clique or ring entrenched in power anywhere in this great organization, the responsibility for its existence rests on this House of Delegates and the means for its immediate destruction are in your hands. You represent a constituency of more than 60,000 physicians, and it devolves on you to discharge faithfully the trust you have assumed.

MEDICAL EDUCATION

For the first time the Council on Medical Education now recommended a year of college education before entrance into a medical school.

The Committee on Medical Legislation reported that it had dealt with a number of problems for the medical profession, most important of which were the establishment of a national department of health with representation in the cabinet, the army medical reorganization bill, the pure food and drug bill and the attitude of the postoffice toward nostrums. The Association gave its fullest support to the proposed legislation for a pure food and drugs act, which passed the next session of the Congress.

THE DIRECTORY

In making its report, the Board of Trustees devoted a special section to the new directory. The editorial work on this directory had been placed in charge of Dr. Frederick R. Green. On many occasions the Association had voted to establish a directory, but now for the first time that activity was becoming effective.

ORGANIZATION

Dr. J. N. McCormack reported for the committee on organization. Visits had been made to Minnesota, Oregon, California, Texas, Oklahoma, Tennessee, Illinois and Kentucky, with special meetings in North Dakota, Montana, Washington, Idaho and Arkansas. These trips and their results had been chronicled week by week and month by month in The Journal.

THE SCIENTIFIC EXHIBIT

By now the Association was holding its seventh scientific exhibit, and a loving cup was presented to Dr. Frank Wynn on behalf of the Board of Trustees.

THE REFERENCE COMMITTEE REPORTS ON THE BOARD

Following a highly favorable report of the work of the Board and of the secretary-editor by a reference committee, headed by Dr. Philip Mills Jones of California, there was an extended discussion in the House of Delegates. Then a motion was introduced from Michigan asking that a special committee be appointed to investigate the criticisms of the Board of Trustees and of the editor, that an auditing expert go over all the books and that an independent study be made of the work of the headquarters office. On motion this was laid on the table. Then Dr. Philip Mills Jones moved a reconsideration of the vote and after some preliminary discussion it was ruled that it could not be reconsidered.

MORE NEW PROJECTS

Again came a mass of resolutions on a variety of topics such as the control of ophthalmia neonatorum, resolutions in behalf of contract surgeons, insurance fees, relief for California sufferers, a resolution to send The Journal free to medical libraries, a resolution on cancer, a resolution for a national department of health, a resolution on the extermination of mosquitoes, for the establishment of a section on tropical medicine, and many similar subjects.

The Section on Ophthalmology had for the first time printed all its papers in advance of the meeting, a procedure which it followed for many years. Papers were not read but merely presented briefly and then discussed. This innovation attracted much attention and there was extensive discussion of the procedure pro and con.

When the delegates left Boston and the editor returned to his headquarters in Chicago, he found himself sitting on the lid of a boiling pot. Chief agitation came from the commercial interests already referred to, which had begun to feel themselves seriously threatened by the trend in the development of controls. The national pure food bill had passed. It was the first step toward protection of the public against nostrums. Time was to show, however, that advertising made futile any attempts to protect the public by listing of composition or claims made on labels. Not until 1938 were there to be laws which would effectively control false claims made in advertising which were responsible for most of the sales of nostrums and "patent" medicines. These new laws would eventually reduce quackery in the United States to an infinitesimal percentage of that which prevailed in the early years of the twentieth century.

THE MEDICAL RECORD ATTACKS

The *New York Medical Record,* which was at that time owned by the publisher, William Wood & Company, constituted itself the spearhead of the attacks on the Board of Trustees and on the secretary-editor. That journal published a series of editorials questioning the financial management of the Association, accusing the editor of exploitation for personal gain and accusing the Board of Trustees of political manipulation and of operation as a hierarchy. From Detroit came a letter signed by Dr. J. H. Carstens reciting some of the charges made in the *Medical Record;* from Detroit also in the person of Dr. Leartus Connor, one of the older wheelhorses in the advancement of the American Medical Association, came a defense of the Board of Trustees and of The Journal. When The Journal published the letter by J. H. Carstens, which was dated August 1, the editor submitted the letter to Dr. T. J. Happel, then chairman of the Board of Trustees. Dr. Happel's reply was restrained and quiet. His most effective sentence was "I agree with the Rev. Sam Jones in cases of such complaints, when he says that 'if you throw a brick into a crowd you can tell who has been hit, because he always makes an outcry.'" However, Dr. Happel submitted in detail a complete statement as to the expenditures of the Association, including the salaries of its editor and its business manager. He told why the trustees had refused to publish complete copies of the payroll. He gave the exact details as to the money paid to Dr. J. N. McCormack for his work in organization. He gave the detail of the problems involved in the printing of the Directory and he indicated why the Board of Trustees thought it desirable that there be established a reserve fund for the Association.

By the second issue in September the editor printed an extended statement on the friends and enemies of the American Medical Association. He listed four different enemies:

> 1. The Proprietary Association of America, which, it will be remembered, circulated most malicious and libelous attacks on the American Medical Association, sending these to the newspapers all over the country, and which in other ways did all it could to create a public sentiment against the Association. This was because the American Medical Association lent its influence and support to the efforts that were being made to enlighten the public regarding the frauds that were being perpetrated on it by the "patent" medicine men.
>
> 2. The so-called "ethical" proprietary medicine men whose products or methods would not bear investigation.
>
> 3. Those privately owned medical journals which were more or less dependent on the income received from the foregoing.
>
> 4. The firm owning and publishing a medical directory.

The editor had not thought it desirable to reply to the attacks that had been made, "but when members of the Association of years' standing, men like Dr. Carstens, whose sincerity, honesty and loyalty to the Association are beyond suspicion, write letters and ask questions which show plainly that they have been misled and have accepted as facts the vague statements and indefinite insinuations made by those who are interested in creating dissatisfaction and suspicion, and when falsehoods and malicious misrepresentations are being circulated by journals hitherto of good repute and standing, then it is evident that the time has come to state some plain truths in order that the members of the profession may know the facts."

In the September 15 issue of THE JOURNAL the leading editorial was entitled "The Medical Record: An Enemy of the American Medical Association." The editorial was a fiery indictment of William Wood & Company, publishers of the *Medical Record,* and of its editor, who in four editorials had attacked the American Medical Association, its officers and its activity. The editor pointed out that the subscriptions to the *Record* had been steadily falling off and the nostrums in its advertising pages steadily increasing. His editorial accused the editor of the *Medical Record* of insinuations and deliberate misstatements of fact. It accused him of malicious misrepresentations. It called attention to the manner in which minor medical journals joined their own shrill cries of graft, fraud and cliché to the statements of the *Medical Record.* The final point in the editorial was a quotation from the *Medical Record* to the effect that "at Boston a strenuous effort was made to get rid of the editor, and that so great has become the dissatisfaction with his administration that this endeavor might have been successful had the general body any voice in the management of the Association." Here in a single paragraph is the editor's reply—and it is good, strong language:

> This statement is unqualifiedly false, as all who attended the Boston session well know. There was an opposition, it is true, and a bitter one, but it was limited to the horde of nostrum venders who have been getting rich by humbugging and deceiving our profession, and to the owners or attachés of those medical journals nourished by the same brood, who allow themselves to be used as the mouthpieces and tools of proprietary interests. The Editor of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION knows full well that he is hated with a most intense hatred by these gentlemen and their allies, and that they would stop at nothing to secure his "dismissal," but he also knows, and knows thoroughly well, that the "management" was fully and completely endorsed by 95 per cent of the physicians at the Boston session and, for that matter, is endorsed by a like proportion of the physicians of the country who know the truth of what is going on.

The battle against the proprietary medicines had assumed strong proportions. Articles in defense of the policy of the Association were contributed by Drs. Frank Billings, Abraham Jacobi, Jabez N. Jackson and George Dock.

In its attack on the most vicious of the proprietaries manufactured by fly-by-night pharmaceutical organizations, THE JOURNAL reached out occasionally to pick off a product of some of the leading manufacturers. The campaign was beginning to be felt from the very bottom to the utmost heights of the medical profession and the associated industries.

In the meantime the quality of THE JOURNAL was continuing to improve steadily. Its councils were *rendering regular important reports. The attacks* on the American Medical Association being made in the public press were rallying physicians to its defense. Many a lukewarm member was becoming interested in the fight and getting ready to lend a hand on the side of righteousness. Surely this was the cleaning of the Augean stables. Nostrums, quacks, "patent" medicines, bogus medical schools, exploiting directories, unprincipled medical periodicals and commercially tainted manufacturers were being seized by the shovel and the pitchfork. The fierce light of publicity was illuminating the cleansing. The people were beginning to appreciate the sincerity of the profession which had as a fundamental motivation the continuous policing of its own house for their benefit.

There were occasional excursions as well into the quality of English in medical writing, the dishonesty of multiple publications of the same article in a variety of medical journals and of plagiarism of articles from foreign publications as well as domestic.

As 1906 came to its end, THE JOURNAL stopped to take stock of the fundamental motivations of the Association as they had developed in the previous sixty years. The American Medical Association had been from the beginning a delegated body. However, it had not really accumulated strength and importance until the reorganization. By the end of 1906 it could report 60,000 members of the constituent state associations and a House of Delegates truly representative of these members. By 1947 it was to report more than 130,000 members.

FUNDAMENTAL MOTIVATIONS

The American Medical Association had been organized primarily to raise the standard of medical education. Year after year by means of resolutions and by the efforts on the part of the medical colleges themselves there had been gradual improvement. However, the first really effective measure was the establishment of the Council on Medical Education and the beginning of regular publication year by year of the status of medical schools considered acceptable to the Council and of the extent to which the graduates of the medical schools were able to pass the state licensing boards.

One of the first questions to come before the preliminary convention in 1847 was the regulation of pharmaceuticals. Repeatedly such resolutions had come before the Association, notably in 1850 and in 1879, but *the establishment of the Council on Pharmacy and* Chemistry in 1905 and the persistent publication in

The Journal of the exact facts regarding the promotion of nostrums was the fundamental step in improving the quality of medical practice and in freeing the public largely from the hazard of "patent" medicines.

There had never been an official register of physicians, although the need of such a register was felt as early as 1847. A directory had been proposed in 1849. Commercial directories designed to exploit both the public and the medical profession had grown in response to the need. With the inspiration of Dr. George H. Simmons, the publication of an honest directory was undertaken by the American Medical Association. This biographic index maintained from day to day in the headquarters office is one of the greatest assets of the American Medical Association. In every war in which our nation has participated, the American Medical Association, has been the possessor of the official roster of the medical profession and has been the fundamental agency in providing our armed forces with a high quality of medical service. It has been invariably necessary for the full time officers of our military services to depend on the vast number of volunteers from the civilian profession to provide medical service during war.

The matter of the establishment of The Journal as the property of the Association was first proposed in 1852, when Dr. J. B. Flint of Kentucky proposed to amend the Constitution to provide for the establishment and maintenance of a quarterly journal. The gradual development of sentiment toward the publication of a weekly periodical, which culminated with the establishment of The Journal in 1883, has been traced in the preceding chapters of this history. The Journal has been the life-blood and the heart of the American Medical Association. Its earnings have paid not only its own expenses but those of the Association as well. Its surplus has been devoted to improvement in the quality of the publication, to obtaining a permanent home and printing plant adequate for the needs of the Association. It has been the powerful voice of the medical profession in raising the standards of medical education, investigating the preparations and composition of drugs and pharmaceutical preparations, compiling and publishing an official directory of the profession and supporting one campaign after another for the advancement of medical science and the provision of medical care to all the people.

1907

ATLANTIC CITY

When the Board of Trustees met in Chicago in its new building early in 1907, the first message was one from W. C. Abbott indicating that it was going to be necessary for the Abbott Company to sell bonds to the medical profession. Dr. Abbott wished to be relieved of any promises given to the Board of Trustees on a previous occasion. The board promptly moved that Dr. Abbott be notified that the Board would hold itself relieved from any agreements made between the Board and Dr. Abbott previously.

Many minor matters were discussed by the Board of Trustees: for instance, whether or not there ought to be an advertisement on the front cover of The Journal and whether or not discounts should be given to some advertisers, such as the owners of sanatoriums.

ADDRESS OF PRESIDENT WILLIAM J. MAYO

When the Board of Trustees met with the House of Delegates at the meeting in Atlantic City in June they heard Dr. William J. Mayo, then President of the Association, make a few apt remarks on the work of the organization. First he pointed out that it was a wise provision which placed the real responsibility for the conduct of the affairs of the Association on the Board of Trustees. He congratulated the Association on the work of Dr. George H. Simmons and he said "his courage and fighting for the best interests as a whole, often at a personal sacrifice, must commend itself to every right thinking man." Already, he pointed out, The Journal was being recognized abroad as a periodical of the highest scientific standards. As he ended this portion of his statement he said "and finally I must pay tribute to the Board of Trustees, not in the perfunctory expressions of one who is about to sever slight official connection with them, but rather as one who wishes to express his real appreciation of their wise control of the affairs of the Association, a control which has enabled the American Medical Association to become the largest and most powerful medical organization in the world." He emphasized the work of the Council on Medical Education and of the Council on Pharmacy and Chemistry. He indicated the battle that was going on between the medical profession and the insurance companies as to the fees being paid physicians for their examinations, and he concluded by recommending that a committee be appointed to consider measures for expediting the business of the House of Delegates.

By this time the Association had cleaned its advertising pages to such an extent that the Board of Trustees was able to announce that from that time on all proprietary medicines would have to be approved by the full Council on Pharmacy and Chemistry before they could be considered acceptable for advertising in The Journal.

Most extensive was the report on the publication of the Directory, which had been undertaken at a tremendous cost to the American Medical Association. It was recognized that this was a cost well justified by the importance of the Directory to the organization.

As it came to the end of its report the Board of Trustees emphasized that profits made in any one year must be held at least to some extent to meet lean years. The board said "The Journal has had a number of years of prosperity, but this cannot always continue, and the only safe refuge will be a strong reserve fund. Any talk about reducing the price of The Journal before you have placed it on a sound footing is folly. Its business interests should always be carefully guarded." The Board of Trustees was able to report, however, that even though more than $25,000 worth of advertisements had been refused, the total gain from advertisements during the year had been $3,000 over the previous year.

MEDICAL EDUCATION

This was the period when the Council on Medical Education was beginning its most fundamental work inspecting medical colleges and rating them. There were 160 medical schools; 82 had been rated above 70, 46 between 50 and 70 and 32 below 50. The Council condemned medical schools conducted solely for profit, night schools, schools designed to prepare students to pass state board examinations, quiz courses and many other abuses.

MEDICAL LEGISLATION

In the years that occupied the first decade of the twentieth century one of the most important committees in the work of the American Medical Association was the Committee on Medical Legislation. This had been under the leadership of Dr. Charles A. L. Reed of Cincinnati, who had a natural aptitude for such work. He had created a national legislative council which met in Washington, as has already been described, and it kept close contact with every measure of importance introduced into the Congress relating to the medical profession. It had established a Bureau of Medical Legislation in the headquarters office and it was seeking expansion of that agency and of its efforts.

COMMITTEE ON HYGIENE AND PUBLIC HEALTH

The Committee on Hygiene and Public Health of the House of Delegates was concerned with education of the public. The committee proposed a board of public education in the American Medical Association. Interviews with such leaders as President Eliot of Harvard, President Stone of the Associated Press and editors of several Philadelphia newspapers on the need for education of the public regarding medicine, disease and health were reported to the House of Delegates. The committee encouraged the delivery of lectures to the public in schools, colleges and forums. President Eliot of Harvard pointed out that Harvard Medical School had already begun a long course of lectures of this sort given to the public in Boston. The committee proposed to develop a series of pamphlets for education of the public to be sold at reasonable prices. This proposal led to the ultimate formation of the Council on Health and Public Instruction of the American Medical Association. Indeed, promptly following this favorable report by a reference committee, Dr. Alexander R. Craig of Pennsylvania introduced an amendment to the By-Laws for the creation of a board of public instruction on medical subjects.

REFERENCE COMMITTEES PROPOSED FOR EARLY STUDY

At this meeting of the House of Delegates a report was adopted to the effect that reference committees be appointed two months in advance of the annual session and that reports be referred to these committees early enough for consideration. The difficulty of handling the vast amount of work presented to the House of Delegates by the Board of Trustees and the various councils and committees is one that has not yet been suitably surmounted. Apparently the delegates in that day were seeking some sort of solution, but obviously that solution has not yet been found. The reference committee on this occasion, under the leadership of Dr. Philip Mills Jones of California, took occasion in its report to commend the Board of Trustees, no doubt as an answer to some of the criticisms that had been made in the previous year. Thus the reference committee said "Any organization or corporation transacting business can only be successful so long as its affairs are conducted in a careful and up to date businesslike manner, and it is with pleasure that we note the essentially thorough and businesslike manner in which the trustees have conducted the affairs of this Association. We believe that the statement of audit is sufficiently definite and comprehensive and to make public further and more intimate business details would be unwise and poor business policy."

When the section of the report dealing with the work of the Board of Trustees was read, an attack on the Board was opened by Dr. H. W. Coe of Oregon. He accused the Board of Trustees of selecting an auditor and said that the auditor ought to be selected by the House of Delegates. He objected to the listing of inventory as an asset. He wanted to know the meaning of the word "agents." Then Dr. J. W. Grosvenor of New York objected to an item called "sundries." He wanted to know what kind of boxes the American Medical Association was selling. He wanted to see a full copy of the payroll. Dr. M. L. Harris, speaking for the trustes, explained the meaning of the statements which had been questioned and apparently became a little annoyed because he ended his first statement with the words "the gentleman has no business ability or he would not ask such simple questions." At this point the President of the American Medical Association warned him, saying "Be careful, Doctor, what you say; be careful: you are reaching a dangerous point." Dr. Harris then proceeded to explain the meaning of the word "sundries" and of "boxes." After some discussion by members of the House of Delegates who were insistent that the report give every possible amount of information that might be wanted, the report was passed, and Dr. George H. Simmons was called on for a statement. He began as follows:

> During the last two years I have been accused of everything in the category from being a grafter to a swindler and everything else. Dr. Billings has been grouped with me. Members of the Board of Trustees have been grouped with me. There have been insinuations cast that are not pleasant.

He then continued to explain the technic of auditing the business of the association and stated that all representatives of the Association were bonded. He pointed out:

> There is not an item paid out at the office of THE JOURNAL that is not represented by a receipt, even if it is a nickel for the boy to pay his street car fare.

Incidentally Dr. Simmons became so sensitive on this point that he continued to sign vouchers covering the purchase of even a paper of pins until he retired in 1924.

When Dr. Simmons finished his speech, Dr. L. S. McMurtry of Kentucky moved that the House of Delegates tender a vote of confidence and thanks. This was seconded by Dr. Coe. Dr. Hubert Work of Colorado moved that the motion include the trustees, and the whole motion was unanimously carried.

Much debate in this House of Delegates concerned a suggestion to erect a monument in memory of Dr. N. S. Davis; the whole consideration was postponed for a year.

THE ARCHIVES OF INTERNAL MEDICINE

One of the most significant actions taken by the Board of Trustees at the session in 1907 was the decision to establish a magazine in the field of internal medicine. Some of the leading clinicians in the United States felt that it was desirable that a publication be developed in the field of clinical medicine. Here are such names as Frank Billings, Henry A. Christian, David L. Edsall, W. S. Thayer, Richard C. Cabot, George Dock and James B. Herrick. At the suggestion of Dr. William H. Welch, a committee including Drs. Joseph L. Miller, George Dock, William Sidney Thayer and David L. Edsall was established to report to the Board in October on the publication of such a journal. Dr. Welch suggested that these men should constitute the editorial staff in case the journal was agreed on. When the Board met again in October the committee made an extended report on the publication of such a periodical and suggested that Dr. Joseph L. Miller act as editor. The complete history of the Archives of Internal Medicine appears as a separate chapter in this history.

1908

CHICAGO

Dr. Joseph D. Bryant occupied the chair when the House of Delegates convened in Chicago in June. Dr. Bryant's presidential address to the House of Delegates complained that there was little for the President to do in the organization. He felt that in some manner the President ought to be more closely tied to the work, but he was much more grieved by the many complaints that had arisen in connection with the exposés of secret remedies and "patent" medicines, which had stirred a furor in the land. There were complaints that businesses were being destroyed, and these were falling on the President of the Association as well as on the Board and the editor.

THE SALARIED ORGANIZER

The Board of Trustees in its report to the House of Delegates felt that the time had come when the Association could and should dispense with the expense of a salaried organizer. Some $40,000 altogether had been expended in building the organization. In recommending discontinuance of the work, the Board said "The American Medical Association will ever owe Dr. J. N. McCormack a debt of gratitude for the great work that he has done in this special department." It recommended that he be employed in securing support for pure food legislation and the need of uniform state laws governing the practice of medicine before the legislators of the different states and as an educator of the public in medical matters.

PUBLIC INSTRUCTION

In this year came the first report of the Board of Public Instruction. This board had prepared an extensive outline of subjects on which the public was to be instructed, covering all the basic sciences, medical and preventive medical problems, and the history of medicine. The board proposed that lectures be provided throughout the country and that outlines of the material that was being extended to the public be included with The Journal.

Arrangements had been made to have the aid of the laboratory of the Public Health and Marine-Hospital Service for the work of the Council on Pharmacy and Chemistry.

The House of Delegates approved a vote of thanks to Hon. George B. Cortelyou, Secretary of the Treasury, "for the interest he had manifested and the active part he had taken in issuing a departmental order recognizing officially the American Medical Association and the work of the Council on Pharmacy and Chemistry, and for his efforts in furtherance of pure food and drug legislation."

THE MC CORMACK VALEDICTORY

In making the final report for the Committee on Organization, Dr. J. N. McCormack told of the work that he had done during the year. He had met with opposition and attack because he had carried the campaign against "patent" medicines and nostrums into the county and state societies, and his valedictory was as follows:

> It only remains for me to tell you that when I leave this platform my official connection with the Association is ended. For eight years I have been almost a stranger to my home and my family that I might serve you. My constant regret has been that my capacity for service was not greater. I want to urge on you that this work is in its infancy and that it must be continued year by year until the new generation of students, educated as I am pleading they shall be in these matters, have taken our places, if the profession is ever to obtain the full measure of its usefulness to itself and to the people. As a business proposition, on a very conservative estimate, I am convinced that my work has added indirectly hundreds of thousands of dollars to your revenues, but that is the smallest part of it, as will one day be known. At least two carefully selected men should be put in the field, and others should be added from year to year until the benefactions of this work are felt, not only by every doctor, but at every hearthstone in this great country—that is, until the profession is really organized.
>
> In conclusion I want to urge you to stand by our great file leader, Dr. Simmons, while he is conducting this reform work to its conclusion. After standing by his side for eight years, often when the result was in doubt, I have been able to know him as no other man ever can. He will make mistakes of the head in the future as he has in the past, but no one will ever be so ready to recognize and right them as he will. I know him, and you can trust him. And to each of you, my co-laborers, and the thousands of my friends you represent in cities, towns and country districts, may I now paraphrase the lines of the Scottish bard and say:
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> "The Monarch may forget the crown,
> So lately placed upon his brow;
> The bridegroom may forget the bride,
> To whom so late he made his vow;
> The mother may forget the babe,
> So lately fondled on her knee;
> But I remember thee, my friend,
> And all that thou hast done for me."

When the report on the work of Dr. J. N. McCormack came from the reference committee, it refused to accept the section dealing with the discontinuance of Dr. McCormack as an organizer and recommended as a supplement that he be continued in addition to his duty as organizer.

At this meeting the House of Delegates established a council on the defense of medical research, and later in the session Dr. Frank Billings offered a resolution that the House of Delegates fully and heartily endorsed the work of Dr. J. N. McCormack and recommended the Board of Trustees to continue him in the same capacity for another year.

OPHTHALMIA

Significant in the House of Delegates also for some years had been the report of the Committee on Ophthalmia Neonatorum. This committee, under the chairmanship of F. Park Lewis, did a vital work in introducing the use of silver nitrate for the prevention of blindness throughout the nation.

SIGNED PAPERS FOR THE PUBLIC

For some time the House of Delegates debated in great detail the question as to whether or not papers for education of the public should be signed by their authors. The debate waxed so warm that the entire issue was recommitted to the reference committee for further consideration.

MISCELLANEOUS

For the first time appears the name of Dr. Arthur T. McCormack of Kentucky rising in support of the work of the Council on Pharmacy and Chemistry and calling on the state medical journals to support the Council in the advertisements that they published.

The American Medical Association cooperated in setting up an American committee for the sixteenth International Medical Congress. It agreed to cooperate with the American Association for the Advancement of Science. It endorsed the candidacy of Dr. C. A. L. Reed for senator from Ohio and again agreed unanimously that there ought to be a department of health in the United States government with a secretary in the cabinet. The decision as to whether or not articles for the public should be signed was left to the Board of Public Instruction. A resolution was adopted expressing confidence in and appreciation of the work of the editor.

1909

ATLANTIC CITY

When the Board of Trustees opened its considerations in 1909 it was confronted with another request from Dr. W. C. Abbott to explain his case. He appeared and explained for fifteen minutes. His explanation was referred to a committee of three for report in the following June.

At the meeting of the Board of Trustees in Chicago in 1908 Dr. T. J. Happel was succeeded as chairman of the Board of Trustees by Dr. William H. Welch. He remained, however, as a member of the Board. He was taken ill suddenly during the meeting of the Board in February 1909 and died in May of that year. He had been a member of the Board of Trustees for eleven years and its chairman for seven years.

THE ABBOTT PROBLEM

Dr. Abbott had met with the committee, which now reported to the Board that he be placed on the same basis as any other reputable firm in regard to advertising in THE JOURNAL. During this period he had conducted a campaign against Dr. George H. Simmons and the work of the Council on Pharmacy and Chemistry which left feelings of ill will that prevailed for many years.

MORE PRESIDENTIAL SUGGESTIONS

President Burrell was unable to attend the Atlantic City session in 1909, but he sent a special message to the House of Delegates with four specific recommendations involving the work of the Association. He recommended first that the President and President-Elect of the Association be invited to attend all meetings of the Board of Trustees and that the policies of councils and committees, such as those on Medical Legislation, Medical Education and Pharmacy and Chemistry, should be submitted to the Board of Trustees and approved before going to the House of Delegates or to the public. He recommended that expenses of travel of all members of committees and councils be paid by the Association. He deprecated the tendency of members of the Association to use political methods in influencing legislation—state and national—and he was opposed particularly to the placing of a representative in Washington. His exact words were:

> The employment of one individual to serve as a lobbyist in Washington or elsewhere is a mistake; it is the adoption of trade union methods and will sooner or later bring the medical profession into discredit.

Next he suggested for consideration by the Board the separation of the offices of editor and general manager and secretary of the Association. He felt that the limelight of public opinion had been turned on this individual and that it was wrong that he should carry that responsibility. This was not in any sense a criticism of his acts. Indeed, he felt that Dr. George H. Simmons was deserving of the highest possible commendation for his remarkable conduct of an extremely trying double office.

STATE MEDICAL JOURNALS

In 1899 not a single state association owned and published its own state journal. By 1909 nineteen states had developed state medical journals.

The Board of Trustees was able to report that the ARCHIVES OF INTERNAL MEDICINE had begun publication in January 1908 and that it had succeeded beyond expectation from the beginning.

Already it had been found that the headquarters building was inadequate to the growing needs of the Association, and the Board of Trustees had promptly contracted for a new structure. The board was proud to call attention to the fact that the previous ten years had been the most remarkable decade in the history of the organization. The circulation of THE JOURNAL had increased 500 per cent. The Association had now enlarged and outgrown one of the largest medical printing plants, and the assets had been increased to hundreds of thousands of dollars.

The Association had made comprehensive studies of medical education and had elevated standards. It had made itself felt in national legislation. It had laid bare innumerable frauds. It had begun education of the masses in general matters pertaining to medicine. It was stimulating scientific investigation by rewards and grants and by scientific exhibits. In concluding its statement the Board of Trustees called attention to the firm defense that it had been compelled to make against the torrent of ridicule and abuse from proprietary medicine interests.

MEDICAL EDUCATION

By this year the Council on Medical Education had held five annual conferences. It had established minimum standards for medical education and for preliminary education. It had begun to concern itself with the quality of the medical curriculum. As a result of its efforts there had been five important mergers of medical colleges by which nine medical schools had been replaced by four stronger ones. It presented a list of fourteen steps toward improvement of medical education and it had been exceedingly active in improving the quality of medical licensure.

The Committee on Ophthalmia Neonatorum made an extensive report indicating how effective had been its drive toward prophylaxis against blindness resulting from gonorrheal infection during childbirth.

There was an extensive report by the Committee on Patents, the Committee on Drug Reform, the Committee on the Memorial to Nathan Smith Davis, and the Committee on Uniform Regulations of Membership.

At this session the name of the Section on Cutaneous Medicine and Surgery was changed to the Section on Dermatology.

The reference committee which considered the recommendations of the President, Dr. Herbert L. Burrell, concurred in the suggestion that the President and President-Elect meet with the Board of Trustees. At this time occurred addition to the Constitution and By-Laws of the important provision which gave the Board of Trustees responsibility for supervision of the actions of committees constituted by action of the House of Delegates between sessions of the House. It was felt that the decisions as to the separation of the offices of editor and general manager and of the secretary were under the authority of the Board of Trustees.

COUNCIL ON DEFENSE OF MEDICAL RESEARCH

The Council on Defense of Medical Research, which included such distinguished names as Walter B. Cannon, chairman, Simon Flexner, David L. Edsall, Harvey Cushing, Reid Hunt and J. A. Capps, reported regulations that it had adopted regarding abuse of experimentation and against misconceptions of its conditions and purposes and concerning the dissemination to the public of the tremendous advances that had been made with the use of animal experimentation.

Incidentally, in the establishment of the Section on Dermatology it was made clear that the subject of syphilis belonged to dermatology and not to urology.

(To be continued)

Clinical Notes, Suggestions and New Instruments

STREPTOMYCIN IN PULMONARY TUBERCULOSIS IN CHILDHOOD: RESULTS IN FOUR CHILDREN

HEYWORTH N. SANFORD, M.D.
and
DONALD E. O'BRIEN, M.D.
Chicago

In January 1944 Schatz, Bugie and Waksman[1] first described a new agent, streptomycin—a substance exhibiting antibiotic activity against gram-negative and gram-positive organisms. Shortly following this first publication, they showed that this drug had definite inhibitory effects against Mycobacterium tuberculosis in vitro.

In controlled experiments Feldman and Hinshaw[2] demonstrated that streptomycin would protect guinea pigs against tuberculosis. In animals which were infected, lesions were shown to heal under streptomycin therapy. Even in animals that showed no gross lesions at autopsy, Myco. tuberculosis could be recovered from the spleens, and it appeared that streptomycin had a suppressive rather than a sterilizing effect. In 39 per cent of their series, the tuberculin test was reversed from positive before treatment to negative following treatment. In a recent report from the Mayo Clinic on a series of 34 cases of tuberculosis treated with streptomycin, Feldman and Hinshaw[3] have made certain further observations which would indicate that the drug has some value in the treatment of tuberculosis in man. As they have stated, it is too early and the cases studied have been too few to warrant any definite conclusions.

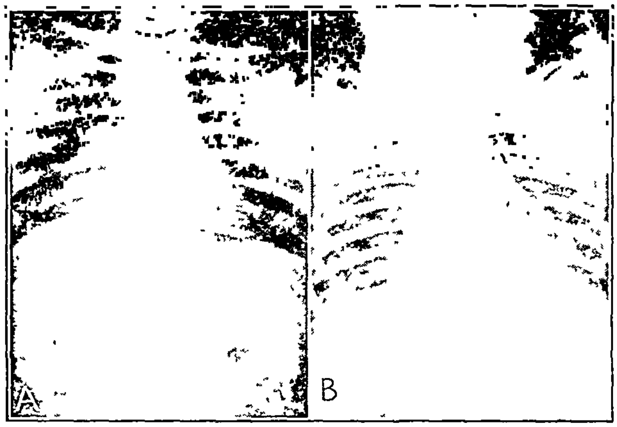

Fig. 1 (case 1).—*A*, fine granular appearance of markings throughout both lungs with a dense cloudy area in right cardiophrenic angle; miliary tuberculosis *B*, after thirty days' treatment with streptomycin the roentgenogram shows considerable clearing over previous films.

Apparently, early, fine, pulmonary lesions respond much more favorably to streptomycin therapy than old, fibrocaseous lesions, as indicated by roentgenologic and sputum studies. From three to six weeks was the earliest that any definite resolution could be observed in the roentgenograms of the chest. When treatment was discontinued, in a few instances reactivation of the process was noted.

During the past seven months we have treated 4 children with early pulmonary tuberculosis of the childhood type with streptomycin. In none of these children did we observe any serious toxic reactions to the drug. The only reaction observed was in the youngest child (aged 7 months), case 2, who had fever and a local reaction consisting of hyperemia and swelling at the site of injection after sixteen days of treatment. The treatments were discontinued for one week, and on their resumption no reaction of any kind occurred; the treatments were continued until the thirty day course was concluded.

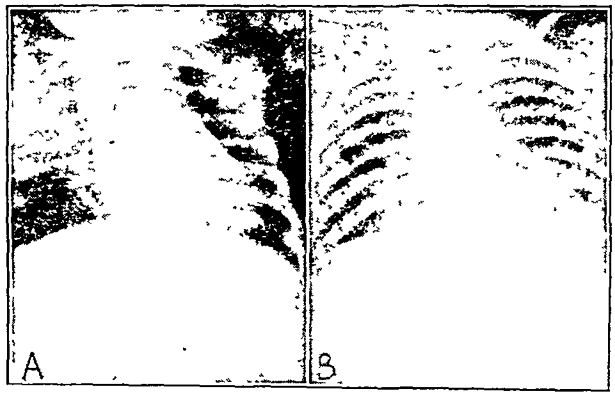

Fig. 2 (case 2).—*A*, miliary increase in markings scattered throughout both lungs; miliary tuberculosis. *B*, sixty days later, following thirty days of streptomycin therapy, the miliary markings are less than those on *previous film. The roentgenologist reports that "if this is true the lesion is probably not a miliary tuberculosis."*

All these children had roentgenograms indicative of tuberculosis, had strongly positive 1:5,000 intradermal tuberculin tests, and showed Myco. tuberculosis bacilli in their stomach

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From the Department of Pediatrics, Presbyterian Hospital, Presbyterian Rush Division of the University of Illinois

The streptomycin for these *observations* was furnished by the Abbott Laboratories to Drs. H. L. Kretschmer and E. E. Irons and later by the Committee on Chemotherapy and *Other Agents of the National* Research Council to Dr. E. E. Irons

[1] Waksman, S. A.; Bugie, E., and Schatz, A.: Isolation of Antibiotic Substances from Soil Micro-Organisms with Special Reference to Streptothricin and Streptomycin, Proc. Staff Meet., Mayo Clin. **19:** 551 (Nov. 15) 1944

[2] Feldman, W. H., and Hinshaw, H. C.: Chemotherapeutic Treatment in Experimental Tuberculosis, Am. Rev. Tuberc. **51:** 582 (June) 1945.

[3] Cited by Keefer, C. S., and others Streptomycin in Infections, J. A. M. A. **132:** 70 (Sept. 14) 1946.

washings. All had fever of 101 to 105 F. and were tested for paratyphoid, typhoid and undulant fever; in all cases blood and stool cultures and nose and throat examinations were made to rule out any other sources of infection.

All the children were given 1,000,000 units of streptomycin a day, administered in divided doses at three hour intervals for thirty days. A total of 30,000,000 units of streptomycin was used for each child, except in case 3, in which treatment was for twenty days only with a total of 20,000,000 units.

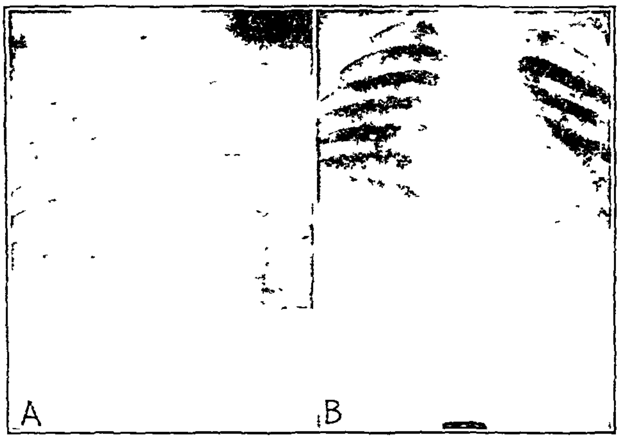

Fig. 3 (case 3).—*A*, some infiltration of both lungs not considered definite enough to diagnose as tuberculous. *B*, one month later, after twenty days of streptomycin therapy, there is complete clearing of the infiltration.

RESULTS

Figure 6 shows the temperature, weight and white blood cell count on each of the 4 children before, during and after treatment. Roentgenograms of each of the children are shown, one taken just before treatment was begun and one taken after treatment was completed. The histories prior to the initiation of treatment were as follows:

Case 1.—A Negro child, aged 2 years, weighed 26 pounds (11.8 Kg.). He had been followed at our dispensary for three months. The contact was in the home. He was a small, emaciated child with a spleen which was just palpable and with moderately enlarged tonsils. Examination of the blood showed 9.5 Gm. of hemoglobin, 3.1 million red blood cells, 15,600 white blood cells, 62 per cent neutrophils, 31 per cent lymphocytes and 7 per cent monocytes. His temperature at admission was 101 F. and rose to 102 F. before treatment was begun. When seen three months after treatment, he weighed 30 pounds (13.6 Kg.), was fever-free, and examination of his blood showed 11 Gm. hemoglobin, 4.2 million red blood cells and 8,700 white blood cells.

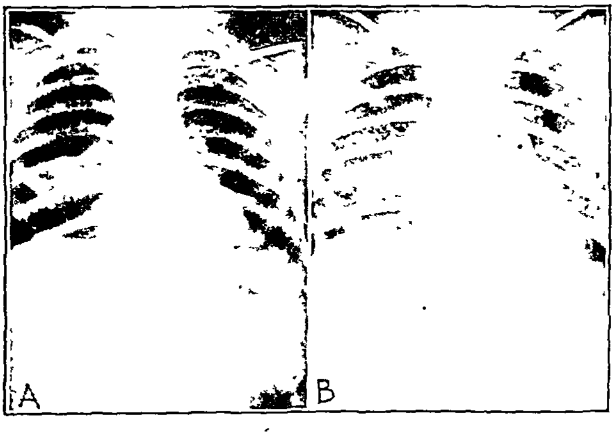

Fig. 4 (case 4).—*A*, infiltration of the right lung with markings suggestive of tuberculosis. *B*, three months later, there is an increase in the lung markings extending outward and downward from the right hilum; childhood type of tuberculosis.

Case 2.—A Negro child aged 7 months weighed 14 pounds (6,350 Gm.). He was in exceedingly poor condition with a cough, temperature of 101 to 103 F. and a palpable spleen. He had been followed in the dispensary one month before admission. His contact was in the home. His physical condition improved decidedly as a result of treatment, and at discharge he weighed 18 pounds (8,165 Gm.), a gain of 4 pounds (1,815 Gm.) in two months. Because of poor home conditions he was removed to the Cook County Hospital and has been fever-free and gaining in weight for the past three months. Examination of his blood at admittance showed 10 Gm. hemoglobin, 4 million red blood cells, 13,300 white blood cells, 48 per cent neutrophils, 35 per cent lymphocytes and 15 per cent monocytes; when he was discharged, it was 12 Gm. hemoglobin, 4.5 million red blood cells and 13,800 white blood cells

Case 3.—A white child aged 17 months weighed 23 pounds (10,433 Gm.). He had extremely good home surroundings and there was no history of contact with tuberculosis. Physical examination was noncontributory except for a temperature of 101 to 105 F., which had persisted for one month. He had been sent to us from another hospital with a diagnosis of tuberculosis, but as the roentgenograms were not entirely conclusive a thorough check was made, with agglutination tests and blood and stool cultures, all of which were negative. Myco. tuberculosis was found in considerable numbers in the first stomach washings. Examination of his blood showed 11.5 Gm. hemoglobin, 3.7 million red blood cells, 9,100 white blood cells, 42 per cent neutrophils, 49 per cent lymphocytes and 9 per cent monocytes. On discharge there were 13 Gm. hemoglobin, 4.5 million red blood cells and 9,000 white blood cells. He gained 1 pound (454 Gm.) during his treatment period and became fever-free. Since being home for three months he has remained fever-free, has gained weight and has eaten well.

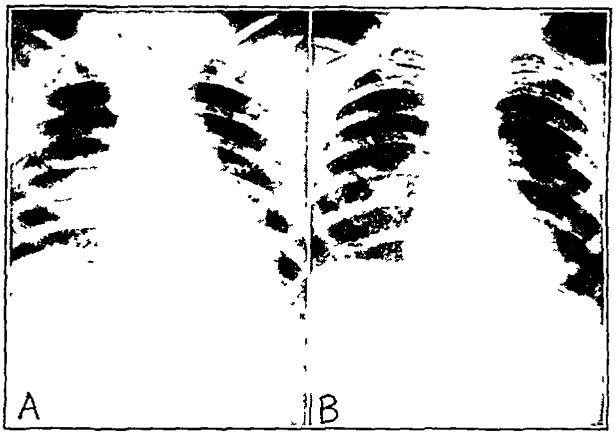

Fig. 5 (case 4).—*A*, picture now is definitely that of childhood type of tuberculosis. *B*, one month later, after thirty days of streptomycin, the increase in lung markings is less than on previous film.

Case 4.—A white boy aged 3 years weighed 37 pounds (16.8 Kg.). He was found to have a positive tuberculin test on routine examination. When the family was examined, the mother was found to have an open cavity, and she was removed to a hospital, where a collapse of the lung was performed. The child's roentgenograms showed an infiltrative type of lesion, but we were unable to obtain any organisms by stomach washings until three months later. By this time the lesions in the roentgenograms had progressed considerably, and his temperature varied from 100 to 101 F. persistently. Examination of his blood revealed 12 Gm. hemoglobin, 3.8 million red blood cells, 6,500 white blood cells, 64 per cent neutrophils, 32 per cent lymphocytes and 2 per cent monocytes. Examination on discharge showed 13 Gm. hemoglobin, 4.5 million red blood cells and 4,800 white blood cells. He was the only child that lost weight during the period of treatment; on discharge his weight was 36 pounds (16.3 Kg.). Since the conclusion of treatment he has gone to Colorado, has been fever-free and after two months weighs 38 pounds (17.2 Kg.).

COMMENT

In all these instances of pulmonary tuberculosis in children we have observed that after a month of treatment with streptomycin the temperature has fallen to normal, the general condition of the child has been bettered and the roentgenograms have shown improvement of the lungs. In none of these children have the roentgenograms shown any extension of the disease into uninvolved areas of lung during streptomycin therapy, in spite of the fact that lesions were extending prior to the institution of therapy. Instead, in all these children regression of the disease has been seen during the course of treatment and has continued after treatment has been stopped. In this regard the results are similar to those of Hinshaw in his report to the Committee on Chemotherapy.

It is well known that tuberculosis in children tends to recovery if the child is removed from its pernicious environment of exposure and if good living conditions are instituted. However, it could hardly be expected that such an improvement in the condition would occur in only a month of hospitalization. We can assume, therefore, that the results of our experience in these 4 instances of pulmonary tuberculosis in children agree with those of Hinshaw, who stated that "streptomycin is very likely to prove valuable as a palliative remedy in tuberculosis at least because of the apparent suppressive action." Many months of waiting for the healing to progress may thus be compressed into a much shorter period, and the danger of the occurrence of a generalized miliary form or a meningitis may be avoided.

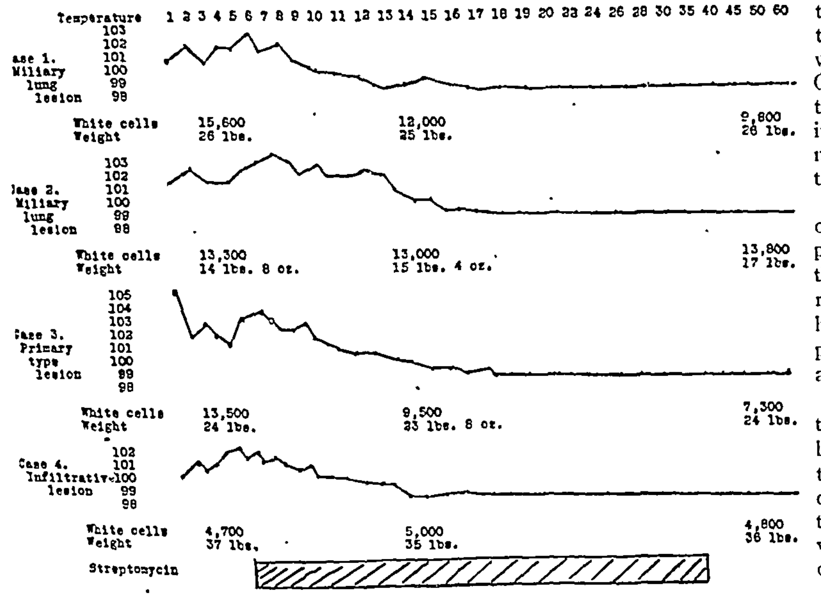

Fig. 6.—The temperature of all patients for five days before the initiation of streptomycin therapy, during the thirty day period of treatment and for thirty days after the conclusion of treatment. The total white blood cell count and the weight before, during and after treatment are also shown.

CONCLUSION

Treatment of 4 children 7 months to 3 years of age with pulmonary tuberculosis by the administration of 1,000,000 units of streptomycin a day for one month resulted in defervescence in all 4, improvement in their general condition and a regression of the appearance of the pulmonary lesions in the roentgenograms.

952 North Michigan Avenue—122 South Michigan Avenue.

Energy Required for Each Nerve Impulse.—In medullated mammalian nerve, the impulse travels at the rate of 100 meters per second, and the energy required per impulse per gram is less than 1/10 of a millionth of a small calory. The recording of such an event offers many difficulties, even with the use of specialized physical methods. Only in the last twenty years have really adequate instruments become available for the analysis of physical aspects of nervous function.

Council on Pharmacy and Chemistry

REPORT OF THE COUNCIL

The Council has authorized publication of the following statement.

AUSTIN SMITH, M.D., *Secretary.*

POSSIBLE DANGERS OF TETRATHIONATE THERAPY OF THROMBOANGIITIS OBLITERANS

About ten years ago Rabinowitz[1] and Rabinowitz and Kahn[2] introduced the use of thiosulfates in the treatment of thromboangiitis obliterans. Bancroft and his associates[3] have reported studies on the effect of sodium thiosulfate on the clotting index of the plasma and fibrinogen content of the blood. They concluded that the morbidity due to postoperative thrombophlebitis could be reduced by the prophylactic injection of sodium thiosulfate combined with a diet low in fats and proteins.

Theis and Freeland[4] proposed the use of sodium tetrathionate ($Na_2S_4O_6.H_2O$) in place of sodium thiosulfate ($Na_2S_2O_3.5H_2O$) in the treatment of thromboangiitis obliterans. Apparently the assumption was made that the toxicity of tetrathionate and that of thiosulfate were essentially the same. The usual intravenous doses employed were 1.0 Gm. of sodium thiosulfate and 0.885 Gm. of sodium tetrathionate and no side reactions or signs of toxicity were reported, although it must be admitted that no serious effort was made to detect subclinical toxicity in the patients treated.

Chen, Rose and Clowes[5] report the lethal dose of sodium tetrathionate in the dog as 1.0 Gm. per kilogram. Cacciavillani[6] found, however, that this substance is much more toxic in the rabbit. Recently Gilman and his associates[7] have reinvestigated the toxicity of tetrathionate, particularly with reference to its mechanism of action.

Gilman and his co-workers showed that tetrathionate can be reduced to thiosulfate in vivo, but the thiosulfate so formed is frequently retained and not excreted as is thiosulfate introduced directly into the body. They also showed that tetrathionate can oxidize mercaptans in vitro and presented evidence to show that such oxidation probably occurs in the body.

In the dog the intravenous LD_{50} for tetrathionate was determined to be about 250 mg. per kilogram and for the rabbit about 75 mg. per kilogram. All animals die from renal failure due to severe necrotizing lesions of the proximal convoluted tubules. With doses of 300 to 500 mg. per kilogram, signs of acute renal damage, as evidenced by complete anuria, may occur within thirty minutes after the intravenous administration of sodium tetrathionate.

Gilman and his associates present two possible theories to explain the severe nephrotoxic action of tetrathionate: (1) Tetrathionate selectively permeates the cells of the proximal tubule to exert a direct toxic action on catalytic systems dependent on the presence of — SH, or (2) the cells of the proximal tubules are selectively damaged by the removal of diffusible — SH compounds.

As an explanation of why toxic effects have not been reported in human beings treated with tetrathionate, Gilman points out that most commercially available tetrathionate contains large

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1. Rabinowitz, H. M.: J. Chemotherapy **13:** 1, 1936.
2. Rabinowitz, H. M., and Kahn, J.: Am. J. Surg. **31:** 329, 1936.
3. Bancroft, F. W.; Stanley-Brown, M., and Chargaff, E.: Ann. Surg. **106:** 868, 1937.
4. Theis, F. V., and Freeland, M. R.: Thromboangiitis Obliterans, Arch. Surg. **40:** 190 (Feb.) 1940.
5. Chen, K. K.; Rose, C. L., and Clowes, G. H. A.: Am. J. M. Sc. **188:** 767, 1934.
6. Cacciavillani, B.: Bull. Soc. Ital. Biol. Sper. **11:** 756, 1936.
7. Gilman, A.; Philips, F. S.; Koelle, E. S.; Allen, R. P., and St. John, E.: Am. J. Physiol. **147:** 115, 1946.

amounts of thiosulfate and that the recommended doses are low. Nevertheless, the importance of maintaining the integrity of the —SH group in the body has been emphasized by recent studies on arsenic and mercury poisoning, and any drug which has potentialities for the destruction or interference with these groups must be considered as toxic and its use must be carefully limited. Moreover, the substantial evidence of nephrotoxic effects from the use of tetrathionate furnishes a convincing reason that the use of this agent in medicine should be abandoned.

Council on Industrial Health and the Council on Pharmacy and Chemistry

PYOGEN

(Pyogen Products, Inc.)

SPRAY PROMOTED TO INDUSTRY AS "COLD CURE"

A large number of inquiries concerning a product designated as Pyogen have been received by the offices of both the Council on Industrial Health and the Council on Pharmacy and Chemistry. The promotion of this preparation is believed to warrant a statement by the two Councils concerned.

The Council on Industrial Health and the Council on Pharmacy and Chemistry of the American Medical Association have therefore authorized publication of the following report.

Carl M. Peterson, M.D.
Secretary, Council on Industrial Health.
Austin Smith, M.D.
Secretary, Council on Pharmacy and Chemistry.

Reminiscent of the method used to promote a nostrum cold remedy[1] sold exclusively to business organizations is the current promotion of the product "Pyogen" (Pyogen Products, Inc., Detroit) labeled by the distributor as follows:

PYOGEN SOLUTION

For local or external use only

Suggested as an adjuvant (aid) in soothing minor irritations of the tissue of the nose, throat and mouth. Contains: Oxyquinoline sulfate, urea, thymol and menthol.

Use full strength and spray often with atomizer in a manner that assures full contact with the irritated areas. May be used as "mouthwash" or "gargle"—full strength. (In illness, avoid self diagnosis and treatment—consult your physician).

In striking contrast to this guarded label statement is the vicarious promotion of the product as a cold preventive and cure at the hands of its disciple, one E. B. Gallaher of the Clover Manufacturing Company, an industrial concern located at Norwalk, Conn. In a printed leaflet, designated as Letter No. 7 of this concern, dated July 1946, there is publicized Mr. Gallaher's testimonial for the use of Pyogen under the following caption:

ABSENTEEISM DUE TO COLDS AN ITEM WHICH ENTERS INTO THE COST OF PRODUCTION

Following an introduction it is explained that "This bulletin is on the subject of avoiding and checking the common cold from which so many serious ailments have their root." Mr. Gallaher then proceeds to relate the story of his personal experience with "Pyogen," stated as having been given to him by a doctor anonymously described as "an eminent scientist in the realm of bacteriology and preventive medicine" who has "established and operated for years a magnificent research laboratory in Detroit." Admittedly a sufferer from hay fever for the past thirty years, Mr. Gallaher explains that, after an examination by consulting physicians, the doctor advised him that he "was susceptible to colds and irritations of the respiratory tract, both in winter and summer," and that he should use this solution to spray his nose and throat thoroughly every night and morning, "allowing the liquid to run down the nostrils into the throat." Mr. Gallaher quotes the doctor's words as follows: "This spray will tend to influence a condition in the respiratory tract under which bacteria cannot 'eat'; and, therefore, cannot grow and multiply; it is compatible with and soothing to inflamed tissue." Mr. Gallaher states he was assured by the doctor "that because this spray was not of the usual 'antiseptic' type, which kills or injures germs on contact"; "it would not kill or injure cells of the body tissue." Using the spray, according to directions, Mr. Gallaher asserts that he has been free of colds and had no attack of hay fever during the season of 1945. With equally amazing candor, Mr. Gallaher expresses some doubt that the spray was responsible for relief from hay fever!

Mr. Gallaher goes on to explain that, with some urging on behalf of industry, the doctor agreed to arrange to have this spray made up to supply industrial plants. He points out that such concerns and wholesalers may now obtain it, but Pyogen is not to be found in drug stores and will not be supplied to individuals. Mr. Gallaher quotes quantity prices with and without an atomizer for bottles of either 2 ounces or 4 ounces respectively at $24 per carton of twelve, discounted at 20 per cent with 6 per cent off, f. o. b. Detroit. He indicates that Pyogen is furnished at cost to key personnel of his plant and is used in his shop to check colds as they appear. According to Mr. Gallaher, "Colds are apparently a thing of the past; and for the past year we have had no loss of time because of colds." He further explains that Pyogen Products, Inc., has been set up at 15050 Greenfield Road, Detroit, as a manufacturing and distributing agency that is distinct from the originating laboratory itself.

Mr. Gallaher concludes his message to industry as follows:

> I can vouch for excellent results for myself, for my family and for my employees, and I have received many letters of approval from industrialists to whom I have sent a sample for trial.
>
> I wanted to be certain of the results before recommending "Pyogen" to my friends, and now, after an experience of a year and a half with a large number of people, I am passing the information on to you for what it is worth, as I have no personal or financial interest, either directly or indirectly, in the product—my only interest is that, because of the remarkable job it has done for us, I feel I should pass on the information to other industrial plants and wholesalers so that they too may benefit from its use.
>
> If you wish a follow this matter further, write to the above company—"Pyogen" is well worth a tryout.

Numerous inquiries concerning Pyogen (many accompanied by the leaflet) that have been received by the American Medical Association attest the truth of Mr. Gallaher's words that his only interest is to pass on the information to other industrial plants and wholesalers. The majority of inquiries stem from physicians presumably acting or employed as consultants for industrial organizations that have been recipients of Mr. Gallaher's self-styled "bulletin." It is well worth noting that these concerns have felt the need of competent medical advice before complying with his recommendation that "'Pyogen' is well worth a tryout."

On request of the Council on Industrial Health, the distributor, Pyogen Products, Inc., supplied samples and the following quantitative statement of ingredients for Pyogen:

Glycerol	1: 1,000
Oxyquinoline sulfate	1:10,000
Carbonyldiamide	1%
Thymol	1:20,000
Menthol	1:20,000
(saccharin)	
(In distilled H_2O)	

In its letter revealing the composition of Pyogen, the firm offered to supply without charge up to 100,000 cc. of the solution for "carrying on objective, comparative clinical or other test work." Can it be that the distributor now feels that there is need of such evidence to support the distribution of Pyogen in industrial concerns?

It is evident from the formula that Pyogen is essentially a saccharin sweetened, weakly mentholated, distilled water solution containing ineffectual dilutions of well known anti-infective agents. Oxyquinoline sulfate (perhaps more widely known as Chinosol) is a disinfectant compound usually employed in effective dilutions of from 1 to 3,000 to 1 to 1,000. Carbonyldiamide is better known chemically as carbamide, or urea, as indicated on the label, and has been widely used in concentrations of 10 per cent or more as a proteolytic agent in chronic wound infections. Thymol, present in the same weak concentration as menthol, can hardly be expected to impart more than a faint odor of phenol. The menthol component is likewise too weak to provide appreciable local cooling or anesthetic action. It is doubtful that glycerol (better known as glycerin) in the strength provided can be considered as either a sweetening agent or a preservative. Even 50 per cent solutions of glycerin are hardly more antiseptic than water. All of this confirms the opinion attributed by Mr. Gallaher to the "doctor," that Pyogen is "not of the usual 'antiseptic' type, which kills or injures germs on contact. . . ." Indeed, it appears doubtful that such a solution is capable of any therapeutic action!

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[1] Report of the Council on Pharmacy and Chemistry and the Council on Industrial Health: Formula A-N-1 (Benson Laboratories): Old Hokum in New Disguise, J. A. M. A. **131**: 1421 (Aug. 24) 1946.

The distributor's labeled suggestion for the use of Pyogen is worded in a manner that constitutes a forthright denial of Mr. Gallaher's testimonial that the product is a preventive for the common cold. If it is an aid in soothing minor irritations of the tissues as specified on the label, it shares this remarkable action with many other less expensive liquids, such as ordinary saline solution. Is it possible that the label is intended to provide immunity to the regulations of the Food and Drug Administration, while at the same time the distributor reaps the reward of Mr. Gallaher's promotional efforts on behalf of the product?

From a confidential source there comes to light the name of Dr. Alexander M. Rovin of Detroit, stated to be the owner and principal of Rovin Therapeutic Products, Inc., 15050 Greenfield Road, Detroit, a corporation chartered in 1934 that is engaged in the manufacture of bacterial vaccines, serum and a variety of therapeutic products. It is further revealed that Pyogen Products, Inc., although described by Mr. Gallaher as "a separate entity from the originating laboratory itself," has for its principal another individual named as the vice president of Rovin Therapeutic Products, Inc., located at the same street address! It thus appears that Dr. Rovin is the mysterious "eminent scientist" and that his concern, Rovin Therapeutic Products, Inc., is the "magnificent research laboratory" linked by Mr. Gallaher to the discovery of Pyogen. Apparently it is not intended that Dr. Rovin be nominally associated with the distribution of this amazing spray, despite the commercial connection between the so-called laboratory and the distributor: Can it be that scientific modesty impels Dr. Rovin to distribute Pyogen through another agency that is headed by his own vice president?

According to information in the files of the Council on Pharmacy and Chemistry and the Bureau of Investigation of the American Medical Association, the name of A. M. Rovin has long been connected with the operation of a "laboratory" in Detroit, under various names, engaged in the business of marketing worthless pharmaceuticals. A letter addressed to a physician in 1924 signed by A. M. Rovin on the stationery of C. Leventis, M.D., Humanized Serum, 1002 Stroh Bldg., Detroit, described an immune serum for tuberculosis that was the subject of subsequent critical comment.[2] There is also a record that this same Rovin was at one time associated with Sherman Laboratories, Inc., 140506 East Jefferson Ave., Detroit, distributors of a line of vaccines. The Detroit telephone book for 1926 listed Rovin, A. M., Biological Depot, at 3524 Cass, and in 1928 a product called Proteostreptosol was advertised by the Rovin Laboratory of 3522-3524 Cass Avenue, Detroit, producers of ampul solutions for injection. In 1931 Alexander M. Rovin was listed as president of A. M. Rovin Laboratories, Inc., at 20 East Bethune Street, Detroit, then engaged in the manufacture of ampul preparations and biochemical products. A group of that concern's "uniglandular" products were subsequently declared not acceptable for New and Nonofficial Remedies by the Council on Pharmacy and Chemistry.[3] The same concern was also the subject of a notice of judgment issued in 1937 by the Food and Drug Administration for adulteration and misbranding of ampuls of iron cacodylate and of iron cacodylate and phosphorus fraudulently represented as a cure for malnutrition, anemia and neurasthemia. This concern was at one time also connected with the sale of "radium active water" advertised to physicians as a solution of "equilibrated elemental radium"! This somewhat odious history may be said to establish a sort of dubious virtuosity for Dr. Rovin.

These hide and seek tactics typify the methods used to sustain the promotion of quack remedies. Through the years it is evident that Dr. Rovin has continued his activities by manipulation of the name for his various business ventures. Pyogen Products, Inc., appears to be his latest outlet, despite the fact that he has evidently taken pains to keep his name out of that organization and the product Pyogen is vicariously promoted by a layman. Evidently the burden of proof for the statement that Pyogen renders bacteria incapable of eating ultimately rests with Dr. Rovin.

The sale of Pyogen should be condemned for any therapeutic purpose. The lay promotional efforts of Mr. Gallaher, however sincere, are considered to be the tool of quackery in its cleverest form, and his self denial of personal commercial interest is clouded by quotation of prices for the Detroit distributor. The Councils again emphasize that "testimonials" either from laymen or from physicians do not constitute scientific evidence. In the distribution of Pyogen exclusively to industrial concerns, it is evidently the hope of the commercial backers that the personal testimony of Mr. Gallaher will prevail on the medically uninformed, despite the lack of published scientific evidence to support the use of the product.

Published medical literature is replete with evidence to indicate that disinfectant solutions used for the purpose of prevention or treatment of upper respiratory infection are notoriously ineffectual. Reimann[4] has just recently pointed out that a wide variety of antiseptic sprays are used for this purpose in spite of the fact that "none can be effectively bactericidal or virucidal on mucosal surfaces without destroying the membrane as well" and "even if they were effective, they are washed away in a few seconds or minutes after their application by ciliary activity, the flow of exudate and gravity." Aptly enough, he points out that although such procedures do at times afford a temporary sense of comfort, there is no evidence that the course of the disease is otherwise influenced.

The Councils believe that competent medical advice always should be sought by concerns that are urged to use some new "cure" or health "aid." Information on such subjects is always available from the American Medical Association to those who wish to provide rational safeguards for the health of employees and other individuals.

NEW AND NONOFFICIAL REMEDIES

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.

Austin Smith, M.D., *Secretary.*

POSTERIOR PITUITARY INJECTION (See New and Nonofficial Remedies, 1946, p. 467).

The following dosage form has been accepted:

The Harrower Laboratory, Inc., Glendale, Calif.

Solution Posterior Pituitary: 1 cc. ampuls and 10 cc. vials. Chlorobutanol, 0.5 per cent as a preservative.

NICOTINAMIDE (See New and Nonofficial Remedies, 1946, p. 627).

The following dosage forms have been accepted:

The Harrower Laboratory, Inc., Glendale, Calif.

Tablets Niacinamide: 50 mg.

E. S. Miller Laboratories, Inc., Los Angeles

Solution Niacinamide, 50 mg. per cc.: 15 cc. vials. Preserved with 0.5 per cent chlorobutanol.

The Vale Chemical Co., Inc., Allentown, Pa.

Tablets Nicotinamide: 50 mg.

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[2] Queries and Minor Notes: Leventis' Humanized Serum, J. A. M. A. **91:** 980 (Sept. 29) 1928.

[3] Report of the Council: Some Endocrine Preparations of the Rovin Laboratories Not Acceptable for N. N. R., J. A. M. A. **100:** 574 (Feb. 25) 1933.

[4] Reimann, Hobart A.: Viral Infections of Respiratory Tract, Their Treatment and Prevention, J. A. M. A. **132:** 487 (Nov. 2) 1946.

THE JOURNAL OF THE
AMERICAN MEDICAL ASSOCIATION

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SATURDAY, MARCH 8, 1947

THE HEALTH CHALLENGE OF OUR SCHOOLS

Manifest unrest prevails in the field of education in the United States. Teachers' strikes and threatened strikes, pupils' strikes, surveys of school systems and widespread public discussion indicate that there are real problems to be solved in American education. Educational facilities surely need improvement. However, the most immediate problem is insufficient money for payment of teachers.

An increasing shortage of teachers threatens because of abandonment of the teaching profession in favor of better paid occupations. Moreover, new recruits to the profession are few because of the poor inducements offered in existing positions. The shortage of teachers has resulted and will continue to result in increased burdens for the teacher, deteriorating quality of available teachers and steady deterioration in the quality of education received by the students.

In many places local funds are insufficient to provide adequate educational standards. Several bills have been introduced into the Congress to procure federal money for improving local educational programs and particularly to meet the serious problem of teachers' salaries.

In sixteen states the majority of classroom units have to be maintained on less than $1,600 a year. Yet in all but two of these states the percentage of state income allocated to education purposes is greater than the national median. Obviously federal assistance is necessary in at least fourteen states if educational opportunity is to be equalized.

The American Medical Association has a long standing and deep interest in the schools because of its interest in health and health education. Adequate health education is impossible unless the general standards of education are maintained. In the schools today a newly awakened and active interest in health education is manifest. The Office of Education, the Public Health Service and the Children's Bureau are concerned in health education. The professional associations of educators and of physicians also have a profound interest in the health of the nation's children.

The national health program of the American Medical Association proposes that if federal money is made available for local use it should be in response to demonstrated need. Only in this way can the poorer and less populated districts be adequately helped. The Association has stood, moreover, for the greatest possible measure of local financing and control. Federal control should be limited to the necessary auditing of federal funds, if any. School health service is already administratively placed in some states in the health department and in others in the education department. Some of the proposed legislation would complicate the picture unnecessarily by making federal appropriations, if any, for school health service to a third agency, such as the Children's Bureau. Such a third agency would then have to redistribute funds to states through health or education departments.

Since 1911 the American Medical Association and the National Education Association have had a Joint Committee on Health Problems in Education. In common with educators the medical profession holds that the schools are for educational purposes and are not intended to be made into hospitals or clinics. THE JOURNAL endorses the principle expressed by the American Association of School Administrators in its year book "Health in Schools":

> . . . In the field of medical service responsibility must be assumed jointly by the individual, school, home, family physician, and dentist and community. . . : The responsibility for medical and dental service must not be usurped by the school because of the immediacy of current health problems. The schools in general have avoided undertaking medical treatment. The medical service has been limited to health examinations, consultations, and advice. The recommendations within the school are concerned with the child's program, involving shortening of the school day, adding rest, extra feedings and indication for special classes.
>
> Good administration will allow the educational specialist and the health specialist to work together, each respecting the professional status, skill and activities of the other.[1]

GLYCOL VAPORS FOR DISINFECTING PURPOSES

The desirability of developing a method of disinfecting air in closed and heavily contaminated spaces is unquestionable. Many procedures have been under investigation. During recent years numerous studies on the germicidal properties of vapors and mists have been published. Various substances have been employed, but through the work of O. H. Robertson and his associates and others special attention has been given to the glycols, notably propylene glycol and triethylene glycol.

Up to 1943 serious practical difficulties inhibited adequate study of glycol vapors. Robertson,[1] for example, said at that time "Practical application of the use of glycol vapors for the purpose of controlling air borne infection has had to await the construction of suitable apparatus for the dispersion of glycol vapors into large and enclosed spaces and the development of an instrument to control automatically the concentration of glycol vapor in the air. Rapid progress is being made in the solution of both these problems."

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[1] American Association of School Administrators: Health in Schools. National Education Association, Washington, D. C., 1942, pp. 58 and 308.

[1] Report of the Standard Methods Committee for the Examination of Germicides and Antibacterial Agents, 1943, Am. J. Pub. Health 34:886 (Aug.) 1944.

An extensive study of glycol vapors for the control of bacteria in large spaces was reported by Bigg and his colleagues [2] in 1944. Their studies were carried out in a specially constructed air conditioned room. The glycol determinations were made on 2 liter samples of room air when propylene glycol was analyzed and on 1 cubic foot samples of air when triethylene glycol was used. Several methods for the production of glycol vapor were employed in their studies. An air scrubber was constructed in which room air was blown through a spray of liquid glycol and droplets were eliminated by a series of baffles and filters which permitted only the vaporized glycol to escape with the carrier air. This proved to be a satisfactory apparatus for vaporization.

These workers found that the concentration of propylene glycol and triethylene glycol vapor necessary to produce bactericidal action is 0.1 mg. per liter and 0.005 mg. per liter respectively. This concentration appears to be free from health or explosive hazard. Another important study of the possible value of glycols in the control of air borne bacteria was carried out by the Navy Medical Research Unit No. 1 [3] and reported in 1944. The technic of dispersion varied somewhat from that employed by Bigg and his colleagues. The navy studies indicated that under the conditions of study glycols are bacteriologically ineffective in controlling droplet dust contamination of air, though this does not mean that their action on droplet nuclei or on the incidence of infections is absent.

In 1946 Robertson,[4] serving as referee for the Committee of the American Public Health Association on standard methods for the examination of germicides and antibacterial agents, reviewed the evidence concerning glycol vapors as germicides. It has been found, he said, that relative saturation of air with a glycol vapor is of greater significance as far as germicidal activity is concerned than is the actual content in milligrams of glycol per liter of air. Consequently an important unsolved problem is the development of testing of apparatus for the dispersion of glycol vapors and the control of their concentration in the air. The principles of such apparatus have been fairly satisfactorily worked out, but, at the time of writing, Robertson said that the actual production of dependable instruments had not yet been achieved. There is also available a device for the automatic regulation of glycol vapor in the air called the glycostat. This instrument has been calibrated so that it can measure degrees of saturation of the air with glycol vapor by direct reading of the variations in the intensity of light reflected from the glycol condensing surface of the wheel of the instrument.

Glycol vapors for the disinfection of closed spaces, such as schoolrooms, barracks or theaters, are not yet ready for general use. Adequate proof of the germicidal effects of both propylene and triethylene glycol appears to be established. The choice of agent, certain details of vaporization and other technical aspects have not yet been worked out to the extent that would warrant the large scale use of glycol air disinfection. Commercial promotion [5] of apparatus for glycol vaporization in public buildings is, therefore, premature.

BASIC SCIENCE INSTRUCTION IN HOSPITAL RESIDENCIES

Apparently misunderstanding has developed regarding the nature of instruction in basic science that ought to be part of the training of a hospital resident who wishes to qualify for practice of one of the specialties in medicine. Such a physician should, of course, know the application of the basic medical sciences employed in the specialty of his interest.

Apparently many hospitals and their staffs have concluded that such training is possible only if the hospital is affiliated with a medical school; the school is requested to present organized course work and supervised laboratory exercises for the residents of the hospital. Elsewhere in this issue is a statement by the Council on Medical Education and Hospitals of the American Medical Association defining its concept of applied basic science instruction in hospital residencies. Applied basic science instruction does not necessitate formal courses but should be distinctly of an applied nature, integrated with the daily clinical work.

In the instruction of residents in anatomy the attitude and enthusiasm of the hospital attending and resident staff in employing the opportunities to teach and learn gross and microscopic anatomy from clinical and pathologic material are more important than an available dissecting laboratory. The facilities and professional personnel of the hospital should afford opportunity and incentive to broaden the resident's existing knowledge of bacteriology. Similarly the biochemistry laboratory of the hospital should provide the stimulus for the resident to enhance knowledge of that subject acquired in medical school and to relate such knowledge to the clinical problems he encounters. The clinical-pathologic conference can be a most effective device for correlating the basic sciences with clinical medicine. The wards of a residency hospital provide ample opportunities for the application and expansion of the house officer's understanding of pharmacology. Clinical medicine, with its diagnostic equipment and special apparatus, affords a rich field for the study of physiology and an effective stimulus for the application of the basic principles of this science.

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[2] Bigg, Edward; Jennings, Burgess H., and Fried, Sherman: The Use of Glycol Vapors for Bacterial Control in Large Spaces, Am. J. M. Sc. **207**: 361, 370 (March) 1944.

[3] Laboratory and Field Studies of Glycols and Floor Oiling in the Control of Air Borne Bacteria (The Personnel of Navy-Medical Research Unit, No. 1, University of California, Berkeley, Calif.), U. S. Naval M. Bull. **42**: 1288 (June) 1944.

[4] Robertson, O. H.: Disinfection of Air by Germicidal Vapors and Mists, Am. J. Pub. Health **36**: 390 (April) 1946.

[5] The Present Status of the Control of Air Borne Infections, Report of the Subcommittee for the Evaluation of Methods to Control Air Borne Infections, of the Committee on Research and Standards, James E. Perkins, Chairman, Am. J. Pub. Health **37**: 13 (Jan.) 1947.

Certainly the overburdened medical schools have contributed heroically to supplementing hospital training with more formalized instruction and research opportunities. Certain of the organized courses of medical schools, primarily for the residents in their own hospitals, are decidedly superior, representing the best thought of the faculty. Yet hospitals and specialists that train residents are shirking their responsibility if they seek to induce medical schools to assume most of the burden for instruction in basic sciences. This not only is an impossible burden for the medical schools but also is counter to every modern trend in medical education, in which there is increasingly closer correlation of the basic sciences and clinical experience.

The problem of basic medical science instruction was the topic for discussion at the February meetings of the Advisory Board for Medical Specialties. It was considered further in a joint meeting of that board with the Council on Medical Education and Hospitals of the American Medical Association and the executive council of the Association of American Medical Colleges. All three groups agreed in principle with the statement published in this issue of The Journal, which can serve as a guide in the organization of residency programs in accordance with the regulations for approval by the Council on Medical Education and Hospitals.

Current Comment

"BRITISH MEDICAL JOURNAL" PUBLICATION

The *British Medical Journal* for February 22 comes as a single page mimeographed on both sides. The first item reads:

> *By Candle-Light.* This, the smallest B. M. J. since 1840, has been "printed" on hand-operated duplicators in B. M. A. House, by permission of the Ministry of Fuel and Power and the C. O. I. Our "printer" this week is the Secretary of the B. M. A.
>
> News and Views in this issue are evaporated to dryness. Abbreviations will, we hope, be unambiguous.
>
> Distribution of doctors in Britain is done largely through Journal advertisements. Hospital and municipal vacancies are noted overleaf. Candidates should apply to the authorities for details. Changes of 2,000 addresses are held up, and addresses of numerous new members cannot be recorded.

In a letter from the editor he informs us that there will probably be three issues of the *British Medical Journal* in this form. The printing is being done on three or four machines in their own building and hand operated, owing to the cutting off of electricity. Condensed as the publication may be, it contains nevertheless a reference to the centennial of the American Medical Association and the publication of the History of the American Medical Association in The Journal. We extend to our British colleagues in this difficult period our sincere sympathy in their affliction.

TUBERCULOSIS STATISTICS IN THE UNITED STATES

Since the turn of the century the death rate from tuberculosis in the United States has been reduced, according to the Metropolitan Life Insurance Company's Statistical Bulletin of November 1946,[1] from approximately 200 per hundred thousand to about 40. In the white population the disease is now a relatively minor cause of death, with a rate of 30 per hundred thousand. In 1944 forty-three states had tuberculosis death rates under 50 per hundred thousand, whereas in 1934 there were only twenty states in that category. In five states the death rate from the disease in 1944 had dropped to well below 20 per hundred thousand. The campaign against tuberculosis has been intensified greatly through the availability of increased funds and through the impetus given by the organization of the Tuberculosis Division of the U. S. Public Health Service. The Bulletin quoted expresses the opinion that tuberculosis may cease to exist in our time. Among the favorable factors may be mentioned the fact that the chances of becoming infected are now greatly diminished and that people generally live and work under more healthful conditions, are better fed and have more adequate knowledge of personal hygiene. The facilities for detecting existing cases have made great advances, so that a greater proportion of unsuspected infections are being discovered in the early stages, when the chances of cure are best. The use of mass x-ray examinations in the army, in schools, in colleges, in factories and in entire communities has undoubtedly contributed much to early recognition of the disease. However, encouraging as the signs are, tuberculosis even now takes more than 50,000 lives a year and is a serious cause of disability among persons in the productive period of life. Tuberculosis still ranks high among the causes of death at most age periods. Among white women from 20 to 34 years of age it remains the principal cause of death, accounting for about one fifth of all deaths in this broad age range. Among white men the disease ranks second only to accidents in the prime ages from 20 to 39 years. In these two decades of life among Negro men, according to the Bulletin, tuberculosis outranked every other cause without exception, as it did among Negro women of the age range from 10 to 39 years. The conquest of tuberculosis, if at all possible, involves not only full utilization of the existing knowledge and facilities for discovering and treating the disease but also the creation of healthful environmental conditions of work and recreation. The attack may well be concentrated in those areas and among those persons in our population where infection is most prevalent and death rates highest.

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[1] Wiping Out Tuberculosis in Our Time, Statist. Bull. Metropolitan Life Insurance Company **27:** 1 (Nov.) 1946.

ORGANIZATION SECTION

Washington Letter

(From a Special Correspondent)

March 6, 1947.

Critical Shortage of Physicians

In a speech delivered for him by Deputy Surgeon General James A. Crabtree, Dr. Thomas Parran, Surgeon General, U. S. Public Health Service, told American Legion medical advisers that "little or nothing has been done to relieve the critical shortage of doctors, scientists, nurses and engineers, urgently needed in both preventive and curative medicine." Dr. Parran said that the nation "has a serious price to pay" for failing to maintain training of young scientists in wartime. He said that it should be made possible for those who have potentialities in the medical profession to develop their skills and put them to productive use. In the same vein, Army Surgeon General Kirk said that "We must get doctors into the Army and train them or there won't be any medical service."

Drive for Economy Brings Personnel Ceiling in Veterans Agency

One result of the Republican drive for economy in government was an order by Gen. Omar N. Bradley, Veterans Administration, applying a personnel freeze on his agency. No additional persons can be employed except for a few doctors, stenographers and typists. A long list of additional economies includes a proposal to audit medical fees closely. General Bradley told agency chiefs that the Veterans Administration would be required by Congress to get along on less money and that the agency might as well start to economize.

Physicians Accused of Neglecting Exercise for Bedridden Patients

Dr. Augustus Thorndike of Harvard University, wartime director, Reconditioning Consultant Division, Army Surgeon General's office, stated here that civilian medical practitioners have failed to adopt a medical lesson of the war that some form of exercise is necessary for bedridden patients recovering from operations. Dr. Thorndike said "the civilian doctor discharges his patient as early as possible to convalesce at home, making room for another patient in the overcrowded hospital system. He is then forgotten until he reports back to the doctor's office, weeks later." Dr. Thorndike lectured at a postgraduate course for physicians at George Washington University Medical School.

Great Medical Center Predicted

The nation's capital now has "more dilapidated hospital plants than any city of comparable size in the country," but Washington will one day be a great medical center, according to Dr. Thomas Parran, U S. Public Health Service. Projects now under way which will raise hospital standards in the District of Columbia, he said, include the hospital merger under the Tydings Act, the proposed Veterans Administration hospital in Arlington, Va., and expansion of the National Institute of Health. Addressing a George Washington University Equipment Fund meeting, he said the need for hospitals in the United States is urgent. There was a 61 per cent increase in the number of patients admitted between 1940 and 1945. Conditions have deteriorated because of an increase in population, a shortage of physicians and nurses and overcrowded housing.

Medical Chief Criticizes Legion for Opposition to Medical Reforms

Dr. Paul R. Hawley, medical director, Veterans Administration, criticized reported opposition of the American Legion to certain medical reforms in the agency, declaring that the Legion was opposed to public law 293, which removed many agency medical positions from civil service. He advocated that this law be extended. He said civil service restrictions hinder efforts to get a sufficient number of physicians to staff the agency's facilities. He promised that the best possible medical service would be available to all veterans as long as he headed the Veterans Administration medical service. He was followed at the meeting of American Legion medical advisers by Brig. Gen. Wallace H. Graham, physician to President Truman, who urged physicians to get the support of organizations like the Legion in attempting to meet the medical needs of the people.

Surgeon General Lauds Navy Hospital Corpsmen

Rear Admiral Clifford A. Swanson, Navy Surgeon General, told American Legion medical advisers that navy hospital corpsmen "did more for our wounded than the wonder drugs." He said that as a result of the heroism and skill of the corpsmen only 3 per cent of the wounded sailors and marines died. He reported that 889 corpsmen were killed and 1,700 were wounded in Pacific battles.

Needs of Civilian Amputees

Major Gen. C. B. Erskine, U. S. M. C., chief of the Reemployment and Retraining Administration, points out that there were 17,000 military amputees as a result of the war but that more than 125,000 civilians underwent amputations during the same period. He said that miracles had been accomplished in rehabilitation of the handicapped.

Coming Medical Meetings

Alabama, Medical Association of the State of, Birmingham, April 15-17. Dr. Douglas L. Cannon, 519 Dexter Ave., Montgomery 4, Secretary.

American Association for the Study of Goiter, Atlanta, Ga., April 3-5. Dr. Thomas C. Davison, 478 Peachtree St., N. E., Atlanta 3, Secretary.

American Association of Anatomists, Montreal, Canada, April 3-5. Dr. Normand L. Hoerr, 2109 Adelbert Road, Cleveland 6, Secretary.

American Association of Industrial Physicians and Surgeons, Buffalo, N. Y., Statler Hotel, April 26-May 4. Dr. Frederick W. Slobe, 28 E. Jackson Blvd., Chicago 4, Secretary.

American College of Physicians, Chicago, April 28-May 2. Mr. E. R. Loveland, 4200 Pine St., Philadelphia 4, Secretary.

American Laryngological, Rhinological and Otological Society, St. Louis, April 25-26. Dr. C. Stewart Nash, 288 Alexander St., Rochester 7, N. Y., Secretary.

American Otological Society, St. Louis, April 21-22. Dr. Gordon D. Hoople, 713 E. Genesee St., Syracuse 2, N. Y., Secretary.

American Society for Research in Psychosomatic Problems, Atlantic City, May 3-4. Dr. Edwin G. Zabriskie, 714 Madison Ave., New York 21, Secretary.

Arkansas Medical Society, Little Rock, April 17-19. Dr. William R. Brooksher, 602 Garrison Ave., Fort Smith, Secretary.

California Medical Association, Los Angeles, Hotel Biltmore, April 30-May 3. Dr. L. Henry Garland, 450 Sutter St., San Francisco 8, Secretary.

Connecticut State Medical Society, New Haven, April 28-30. Dr. Creighton Barker, 258 Church St., New Haven 10, Secretary.

Dallas Southern Clinical Society, Dallas, Texas, March 17-20. Dr. Glenn D. Carlson, 1133 Medical Arts Bldg., Dallas, Secretary.

Florida Medical Association, Miami, April 20-23. Dr. Robert B. McIver, P. O. Box 1018, Jacksonville, Secretary.

Georgia, Medical Association of, Augusta, Bon Air Hotel, April 22-25. Dr. Edgar D. Shanks, 478 Peachtree St. N. E., Atlanta, Secretary.

Hawaii Territorial Medical Association, Lihue, Kauai, May 1-4. Dr. Harry L. Arnold Jr., 510 S. Beretania St., Honolulu 53, Secretary.

Nebraska State Medical Association, Omaha, April 28-May 1. Dr. R. B. Adams, 416 Federal Securities Bldg., Lincoln 8, Secretary.

Iowa State Medical Society, Des Moines, April 16-18. Dr. John C. Parsons, 406 Sixth Ave., Des Moines 9, Secretary.

Maryland, Medical and Chirurgical Faculty of, Baltimore, April 22-23. Dr. W. Houston Toulson, 1211 Cathedral St., Baltimore 29, Secretary.

Michigan Postgraduate Clinical Conference, Detroit, Book-Cadillac Hotel, March 12-14. Dr. L. Fernald Foster, 2020 Olds Tower, Lansing 8, Secretary.

Mid-Atlantic Section, American Urological Association, Washington, D. C., Hotel Statler, March 20-22. Dr. Theodore R. Fetter, 255 S. 17th St., Philadelphia, Secretary.

Missouri State Medical Association, Kansas City, March 30-April 2. Mr. Thomas R. O'Brien, 634 N. Grand Blvd., St. Louis 3, Executive Secretary.

New Jersey, Medical Society of, Atlantic City, Haddon Hall, April 22-24. Dr. Alfred Stahl, 160 Lincoln Ave., Newark 4, Secretary.

New Mexico Medical Society, Albuquerque, April 30-May 3. Dr. H. L. January, 221 West Central Ave., [illegible]

North Carolina, Medical Society of th [illegible] Robert E. Lee Hotel, April 28-30. Dr. Ro [illegible] Box 232, Red Springs, Secretary.

Northern Tri-State Medical Association, Detroit, April 8. Dr. John L. Stifel, 232 Michigan St., Toledo 2, Ohio, Secretary.

Oklahoma State Medical Association, Tulsa, Mayo Hotel, April 22-25. Mr. R. H. Graham, 210 Plaza Court Bldg., Oklahoma City, Executive Secretary.

Southeastern Surgical Congress, Louisville, Ky., Brown Hotel, March 10-12. Dr. Benjamin T. Beasley, 45 Edgewood Ave. S.E., Atlanta 3, Ga., Secretary.

Southwest Allergy Forum, Shreveport, La., March 31-April 1. Dr. Sim Hulsey, 505 Medical Arts Bldg., Fort Worth, Texas, Secretary.

Tennessee State Medical Association, Memphis, April 8-10. Dr. W. M. Hardy, 706 Church St., Nashville 3, Secretary.

Medical Legislation

MEDICAL BILLS IN CONGRESS

Medical Aid Act of 1947

A bill introduced by Senator Lodge, Massachusetts, S. 678, proposes to enact a **"Medical Aid Act of 1947,"** under which assistance would be given to the states in furnishing certain medical aid to needy and other individuals. The term "medical aid" is defined to mean "making available, free to needy persons and at a minimum cost to other persons, x-ray services, respirators and any drug which is of substantial, accepted, and specific value in the treatment or prevention of pneumonia, streptococcus infections, diabetes, pernicious anemia and other anemias, congestive heart failure, glandular and nervous disorders, nutritional deficiency, typhoid fever, and various infectious diseases." The bill proposes that there shall be authorized for the fiscal year ending June 30, 1948 and for each fiscal year thereafter, such sums as may be necessary to carry out its provisions.

Training of Nurses

Representative Lane, Massachusetts, has introduced H. R. 2077 proposing to continue in effect until June 30, 1950 the provisions of the Act of June 15, 1941 relating to **the training of nurses** through grants to institutions providing such training.

Miscellaneous

A bill introduced by Representative Walter, Pennsylvania, as H. R. 1680, proposes to provide a **correctional system for youth offenders** convicted in the courts of the United States. This legislation, if enacted, would be cited as the "Youth Authority Act."

Representative Angell, Oregon, proposes by H. R. 1869 to provide for **compensation to blind persons** for loss of earning power due to blindness. Each blind person whose income, other than compensation payable under this legislation, is $300 a year or less will be paid $75 a month. If the income exceeds $300 a year, he will be paid $75 a month less one-half the average monthly amount by which his other monthly income exceeds $300 a year.

STATE LEGISLATION

Arizona

Bills Introduced.—H. 205 proposes the enactment of a state **hospital survey and construction act** requiring a survey of existing hospital and public health center facilities within the state and the preparation of a program for the construction of additional needed facilities. The proposal also requires the appointment of an advisory survey and construction council and appoints the superintendent of public health as the agent or agency to apply for and accept federal funds to assist in the state survey and construction program. H. 206 proposes a law providing for the licensing, regulation and inspection of **hospitals within the state.**

California

Bills Introduced.—A. 2005, to amend the **law relating to chiropractic,** proposes among other things to define chiropractic as follows: "(b) Chiropractic is the science and art of determining, locating and correcting by adjustment, impingements upon nerves either within the spine or at the point of emergence therefrom through spinal foraminae, caused by subluxation of the vertebrae. (c) A spinal subluxation is an irregularity in location of vertebrae within the natural range of movement, less than traumatic, which causes an impingement either upon the spinal cord or upon a nerve at the point of emergence thereof through spinal foraminae which causes impingement upon nerve tissue. (d) An impingement is an excessive pressure upon nerve tissue of the spinal cord or of a nerve at the point of emergence thereof through spinal foraminae, which prevents the normal transmission of nerve force." A. 2026 proposes a law to prohibit the use of live **dogs and cats in surgical operations** except under certain circumstances and to prohibit the allocation to medical or scientific institutions of dogs or cats. The proposal would limit experiments to persons having experimenters' licenses which have been issued by a commission to be appointed by the governor. The commission members must be members of a society formed for the purpose of preventing cruelty to animals. No exception is made in the case of properly conducted scientific experiments or investigations performed under the authority of the faculty of a regularly incorporated medical college or university. A. 2078, to amend the business and professions code, proposes to prohibit any one not licensed under that code from using **physical medicine** in treating the human body of any person for compensation. A. 2290, to amend **the insurance code,** proposes the organization of medical and hospital service associations. S. 1026, to amend the education code, proposes to prohibit any instruction in **sex relations, marital problems,** or like questions at any time prior to the twelfth grade. The proposal would further require that when such instruction is given it shall be conducted by a duly licensed physician and handled as an individual activity retaining the normal relationship of physician and patient. S. 1050 proposes to prohibit any person not licensed as a physician and surgeon or as a drugless practitioner from **using any drugs or severing or penetrating** any tissues of the human body. S. 1062, to amend the business and professions code, proposes to grant to special agents and investigators of the board of medical examiners the **right to inspect files** and correspondence in the possession of any licensed physician. S. 1068 proposes to prohibit any person other than a physician and surgeon from making a **postmortem examination** or performing an autopsy. S. 1257, to amend the health and safety code, proposes to authorize the state department of public health to assist in the development of **community blood banks** for the collection, processing and distribution of human whole blood, blood plasma and blood fraction products derived from human blood.

Connecticut

Bills Introduced.—H. 868 proposes a law to prevent rebates in connection with the **purchase of eyeglasses.** H. 945 proposes to **authorize chiropractors** to execute death certificates. H. 946 and H. 948 propose to **authorize a chiropractor** to prescribe hygienic and sanitary measures incident to the care of the body. H. 949 proposes to **authorize naturopathic physicians** to execute death certificates. H. 953 proposes to authorize licensed physicians to prescribe means or methods for the **temporary prevention of pregnancy** in a married woman when, in the opinion of such physician, pregnancy would endanger the life or the health of such woman. H. 1235 proposes to require applicants for a **license to practice naturopathy** to have had at least one year college credit prior to entering a naturopathic school. S. 285 proposes an act for the regulation of **massage practitioners** and defines the practice of massage as "any process or action of conjoint motion and pressure applied by hand, such as rubbing, stroking, kneading, tapping or other similar manipulation, with or without the application of creams, lotions or liniments or the use of hand vibrators or rollers to any part of the human body for the purpose of relieving pains, aches, stiffness or soreness of muscles or for the purpose of stimulating blood circulation or reducing conditions of obesity, including the use of vapor treatments and any and all other manual means, such as physical exercises for the conditioning of the human body."

Delaware

Bills Introduced.—H. 42 proposes to require all persons desiring to obtain a marriage license to obtain a certificate from a duly licensed physician showing that the applicant has undergone a standard serologic **test for syphilis** and that the applicant is not infected or if so infected is not in a stage of the disease which is or may become communicable to the marital partner. This proposal was amended in the house February 18 so as to define the term "physician" as meaning any duly licensed medical osteopathic or chiropractic practitioner. H. 191 proposes a law for the licensing, inspection and regulation of hospitals and the creation of an **advisory hospital council.** H. 192 proposes the enactment of a **hospital survey and construction act** requiring an inventory of existing hospitals and the development of a program for the construction of additional needed facilities. The proposal would appoint the state board of health as the agency authorized to apply for and accept federal funds for state assistance in survey and construction programs. H. 210, to amend the **workmen's compensation law,** proposes that the terms "physician" or "surgeon" should include osteopaths.

Idaho

Bills Introduced.—H. 112 proposes to authorize the state board of education to conduct **examinations in the basic sciences** for all persons who desire to apply for a license to practice the healing art or any branch thereof in the state. S. 102 proposes the enactment of a **state hospital survey and construction act** requiring a statewide survey of hospital facilities and the preparation of a program for the construction of additional needed facilities. The proposal would also require the appointment of an advisory hospital council and would authorize the commissioner of the state department of public health to apply for and accept federal funds to assist the state in survey and construction activities.

Bills Passed.—H. 141 passed the house February 11. It proposes to **add cancer** to the list of diseases which a physician must immediately report to the department of public health. H. 144 passed the house February 18. It proposes to limit the **sale of barbituric acid** or compounds to sale on a prescription signed by a person licensed to prescribe or administer barbiturates.

Indiana

Bills Introduced.—H. 450 proposes to provide for the licensing, inspection and regulation of **nursing homes.** S. 282 proposes to authorize the state board of health to compile in pamphlet form recognized scientific information in regard to **contraceptive measures** and to release said pamphlets to state universities, colleges and normal schools for instructional purposes, to married women whose financial status does not permit them to rear and educate more children and to licensed physicians, who may redistribute such pamphlets to patients whom they may deem in need thereof.

Bill Passed.—S. 212 passed the senate February 14. It proposes to amend the medical practice act by authorizing the board of medical examiners to **accept examinations certified by the National Board of Medical Examiners** as the examination given to the applicant. This would enable an applicant to be licensed in Indiana without having to wait until the regular examination given by the Indiana board occurs.

Bill Enacted.—H. 30 was approved February 18. It requires all physicians to report within five days to the state board of health in writing the name, age and address of every person diagnosed as **a case of epilepsy** or similar disorders characterized by lapses of consciousness.

Iowa

Bills Introduced.—H. 236 proposes that a **handicapped child** need not submit to surgical intervention if it is against the wishes of the child's parents or guardians. H. 314 proposes the enactment of a **hospital survey and construction act** requiring a survey of existing hospital facilities throughout the state and the development of a program for the construction of additional facilities. The proposal would also require the appointment of a hospital advisory council and would appoint the commissioner of public health as the agent to apply for and receive federal funds to be used for assistance in the state survey or construc-

Acc-No. 58

tion program. S. 318 proposes the creation of a **state board of naturopathic examiners** and defines naturopathy as that system of the healing arts which means "nature cure or health by natural methods" and is defined as the prevention, diagnosis and treatment of human injuries, ailments and diseases by means of any one or more of the psychologic, physical or mechanical, chemical or material forces or agencies of nature.

Kansas

Bills Introduced.—H. 67, previously reported as a hospital licensing law, was amended in the house on February 18 to authorize the board of trustees of any **hospital to select the professional staff** members of the institution, provided that no rule or regulation shall be made which will discriminate against any practitioner of the healing art who is licensed to practice in the state. H. 178, to amend the medical practice act, proposes to require the appointment of **two osteopathic physicians** as members of the state board of medical registration and examination.

Bill Passed.—H. 102 passed the house February 11. It proposes to require all persons applying for a **marriage license** to present a certificate signed by a physician legally qualified under the laws of the state of Kansas or of the state in which he is practicing that the applicant is not infected with syphilis in such a stage as to make it communicable to a marital partner.

Massachusetts

Bills Introduced.—H. 1068 proposes to provide for the creation of a state institution to be known as the **University of Massachusetts** which would furnish instruction in medicine and other subjects. H. 1362 proposes to require persons purchasing **dogs or cats** to be used for experimentation purposes to keep a record of the same, which record shall be open to the inspection of the commissioner of public safety and all police officials of the commonwealth. S 391 proposes to require **food handlers to obtain a certificate from a duly registered physician certifying** that they are not infected with an infectious or communicable disease.

Michigan

Bill Introduced.—H. 166 proposes the creation of a board of **examiners for industrial medical assistants** and defines an industrial assistant as a person authorized by the state to administer first aid to sick and injured persons in an emergency occurring within the confines of an industrial plant under the supervision of a licensed physician and/or to care for the sick, the injured and persons afflicted with any human ailment, by attendance or the use of any therapeutic agent, in an industrial hospital or first aid station maintained by an industrial plant for the treatment of sick or injured persons under the direction and supervision of a licensed physician

Minnesota

Bill Introduced.—S. 572 proposes certain amendments to **the osteopathic law** which would create a state osteopathic board of examiners in medicine and surgery and would define osteopathy as "a complete school of medicine based upon the osteopathic concept which is different in emphasis from those principles recognized by other schools of medicine." The proposal would grant to osteopaths identical privileges with those now possessed by general practitioners.

Montana

Bill Introduced.—H 235 was previously reported as a hospital licensing proposal. A house amendment of February 14 proposes to add to the proposal a requirement that no person operating a hospital shall in any manner or by any device **discriminate between the patients** of any regularly licensed physician for or on any ground or reason whatever, including the fact that any such physician is not a member of the medical or surgical or other staff, clinic or internal instrumentality of the hospital.

Bill Passed.—S. 100 passed the senate February 21. It proposes that each applicant for a **marriage license** shall present a certificate signed by a duly qualified physician licensed to practice medicine and surgery in any state or territory of the United States or any person authorized by the laws of Montana to make such certificate certifying that the applicant has been given an examination for the discovery of syphilis.

New Mexico

Bills Introduced.—H. 148 proposes the creation of a board of **naturopathic physicians** and defines naturopathy as follows. "The term 'Naturopathy' as used herein shall comprehend, embrace and be composed of the following named acts, practices and usages, as set forth in the Act of Congress of the United States, enacted Feb. 7, 1931, H R 12169 defining Naturopathy. Diagnosis and Practice of physiological and material sciences of healing as follows,—The physiological and mechanical sciences such as mechanotherapy, articular manipulation, corrective orthopedic gymnastics, neurotherapy, psycho-therapy, hydrotherapy, and mineral baths, electrotherapy, thermotherapy, phototherapy, chromotherapy, vibrotherapy, thalmotherapy, and dietetics which shall include the use of foods of such biochemical tissue-building products and cell salts as are found in the normal body; and the use of vegetal oils and dehydrated and pulverized fruits, flowers, seeds, barks, herbs, roots, and vegetables uncompounded and in their natural state." S. 138 proposes an enabling act for the formation and regulation of **physicians' service plans.** S. 168 proposes the employment of a state **hospital advisory council** to draw up a program for construction of hospitals within the state and to administer state funds for such construction purposes.

Bills Passed.—S. 51 passed the senate February 20. It proposes to **define a clinic** as an establishment where patients are admitted for special study and treatment by a group of physicians practicing together and proposes further that no person or group of persons shall use the word clinic in connection with any establishment or office which does not come within such definition. S. 52 passed the senate February 20. It proposes to require all persons licensed to practice any of the healing arts to clearly **designate the school of medicine** or practice which such person is licensed to engage in and further provides that failure to comply with such restriction would constitute unprofessional conduct. S 53 passed the senate February 20. It proposes to authorize the use of **the injunctive process** to prohibit the illegal practice of medicine or the healing arts.

New York

Bills Introduced.—A. 1549 and S. 1508, to amend the education law, propose to require the annual **examination of all school children** for symptoms of tuberculosis A. 1569 proposes the creation of a **state science council** to act as the agency of the state in an examination and survey of advances and developments in the fields of theoretic and applied sciences and in the formulation of a long range scientific program designed to promote the health, welfare and safety of the residents of the state. A. 1703 and A. 1804 propose the creation of a temporary state commission to make a survey of the causes and effects of **heart disease,** rheumatic fever, rheumatic heart and kindred or related diseases. A. 1759, to amend the education law, proposes the creation of a **state board of chiropractic examiners** and defines chiropractic "as the science of locating and the removing of nerve interference in the human body, according to chiropractic principle, where subluxations of the vertebral column appear, or where interference, or misalignment is indicated. It excludes operative surgery, the reduction of fractures, the prescription of drugs or medicines, and the practice of obstetrics" S. 1402 proposes the enactment of a **disability benefit law.**

Oregon

Bills Introduced.—H. 275 proposes an act for the regulation, licensing and conducting of **clinical laboratories,** the licensing of clinical laboratory technologists and clinical laboratory technicians and the issuance of permits to physicians and surgeons conducting such laboratories. S. 287 would **prohibit chiropractors** from practicing medicine or obstetrics and from performing any type of surgery. It also proposes to eliminate from the existing definition of chiropractic the provision authorizing such practitioners to employ and practice physiotherapy, electrotherapy and hydrotherapy. S. 329, to amend the **basic science law,** proposes that any veteran who takes the examination and fails in any one subject may be reexamined in that subject alone at any time within twelve months.

South Dakota

Bills Introduced.—H. 50 proposes the enactment of a South Dakota **hospital survey and construction act.** A house amendment of February 21 to this proposal would require any institution accepting federal funds for construction purposes to first agree that it would not discriminate between practitioners of the various healing arts and that every duly licensed doctor of medicine, osteopathic physician and chiropractor should have the right to and should be entitled to practice his profession in any such hospital which had received federal funds. H. 302, to amend the basic science act, proposes to exempt therefrom any one who has served as a medical officer in World War II. S 184 proposes to prohibit the **sale of barbiturates** except on the original prescription of a practitioner, whom the proposal defines as a person licensed by law to prescribe and administer barbiturates.

West Virginia

Bill Passed.—H. 9 passed the senate February 19. To amend the medical practice act, it proposes to exempt therefrom the practice of the **religious tenets of any church** in the ministration to the sick or suffering by mental or spiritual means, provided sanitary and public health laws are complied with and provided no practices shall be used which may be dangerous or detrimental to life or health and further that no person shall be denied the benefits of accepted medical and surgical practices.

Bills Enacted.—H. 50 was approved February 13. It provides, among other things, that every physician practicing in the state shall report in writing to the board of control the name, age, sex, race, home address and type of disease of every person having **tuberculosis** who comes under his observation or care, within forty-eight hours after the discovery of this condition. S. 51 was approved February 18. It provides regulations for the **licensing of hospitals,** sanatoriums, rest homes and related institutions.

Wisconsin

Bill Introduced.—A. 231 proposes to authorize the formation of **cooperative associations** organized for the purpose of maintaining a nonprofit plan or plans for sickness care, including hospital care, for their members through contracts with physicians, medical societies, hospitals and others. The proposal would further require that no such plan would in any way interfere with the manner or mode of the practice of medicine, the relationship of physician and patient or the responsibility of the physician to a patient.

Wyoming

Bills Passed.—H. 63 passed the house February 14. It proposes amendments to the medical practice act which would require the **appointment of an osteopath** on the examining board and the licensing of applicants to practice osteopathy, which is defined as "the treatment of human ailments, diseases or infirmities by mechanotherapy, or by any means or method other than surgery or drugs." The amendments would also permit the use of injunctive process to restrain the unlicensed practice of medicine, surgery or osteopathy. S. 73 passed the senate February 20. It proposes the enactment of a state **hospital survey and construction act** requiring an inventory of existing hospitals and the development of a program for the construction of additional necessary hospital facilities. The proposal would also require the appointment of an advisory hospital council and provide for collaboration with the federal government in the application for and acceptance of federal funds to assist in hospital survey or construction within the state.

5

GOVERNMENT SERVICES

PUBLIC HEALTH SERVICE

ANNUAL REPORT OF PUBLIC HEALTH SERVICE

In the annual report of the U. S. Public Health Service the Surgeon General states that the fiscal year ended June 30, 1946 was notable for three milestones in the history of public health: (1) passage of the Hospital Surgery and Construction Act, (2) passage of the National Mental Health Act and (3) drafting a constitution for the World Health Organization.

The Hospital Survey and Construction Act provides for extensive federal aid to the states in surveying their needs for hospitals and health centers and for the construction of facilities to meet these needs.

The National Mental Health Act authorizes the appropriation of $7,500,000 for the construction of a National Institute of Mental Health which is to conduct research, serve as a national center for the coordination of research and the exchange of information and provide advance training for specialists in this field. The annual appropriation authorized for assistance to the states in their public health programs is increased by $10,000,000 to cover the new mental health activities.

The constitution of the World Health Organization, adopted at the international health conference of the United Nations in New York in July 1946, sets forth, the report states, a new philosophy of international health relations and establishes the framework for an organization of greater scope and authority than any previously created. The proposed functions go far beyond merely preventing the spread of disease. The intent of those who framed this constitution is that all existing international health agencies be brought into relationship with the new organization and that the way be left open for the admission of all nations, including nonmembers of the United Nations. The organization will come into being when its constitution has been ratified by twenty-six of the United Nations.

According to the report the provisional death rate for the United States, 10.6 per thousand, excluding the armed forces overseas, was in 1945 the same as in 1944; for the first five months of 1946 the rate showed a slight increase over the corresponding period of the previous year from 10.8 to 10.9. The stimulus given to tuberculosis control throughout the country is reflected in the fact that more than 700 miniature x-ray units are in use by hospital and voluntary agencies. A shift of emphasis has come about in the venereal disease control program, stress now being laid on the problems of finding new cases and of tracing and bringing to treatment as many contacts as possible. The community survey in which civic organizations, city authorities and the press are mobilized to support an intensive mass blood testing program is a new technic which has given excellent results. With the end of the war, malaria control activities have been redirected toward an attack on the permanent foci of malaria. This work and the programs for the control of typhus, dengue and other diseases of tropical origin will be carried on by the newly established communicable disease center in Atlanta, Ga., which also will provide specialized training for representatives of state and local departments and other federal agencies concerned with these diseases.

For the first time, funds for grants-in-aid to states for cancer control programs are specifically provided in the budget for the fiscal year 1946-1947, which allocates $2,500,000 for this purpose. Cancer control is also being aided by awarding traineeships through which physicians obtain clinical training in the diagnosis and treatment of cancer throughout the country. The wartime testing of antimalarial drugs has been continued at the National Institute of Health, where some drugs were found to be from 32 to 128 times as active as quinine. The Public Health Service continues to assign personnel to advise and assist numerous other agencies in the conduct of medical and public health programs. Officers were on detail during the year to nine departments and more than a dozen other agencies of the federal government.

A new division, the Division of Nursing, was established in the Office of the Surgeon General under the President's Reorganization Plan No. 2, effective July 16, 1946. The Public Health Service became the federal agency having chief responsibility for the collection, analysis and publication of national vital statistics.

The number of pieces of incoming mail and telegrams for the year totaled 1,101,509 and the outgoing correspondence 479,220. At the close of the fiscal year 2,512 officers were on active duty and 2,858 reserve officers were on the inactive list. Nurses, dietitians and physical therapists were commissioned in the regular corps for the first time under authority of the Public Health Service act of 1944. Through arrangements with the Army, the Public Health Service obtained 110 officers who were trained under the Army Specialized Training Program. Of 426 candidates examined for appointment to the regular corps, 182 attained passing grades. A total of 211 new appointments were made in the regular corps; and 401 reserve officers were appointed during the year, 1,221 reserve and 22 regular officers were relieved from active duty by retirement, resignation, termination or inactivation. Five U. S. Public Health Service officers were killed in service during the war. One officer died in a Japanese camp for prisoners of war and two captured by the Japanese at the fall of the Philippines and freed by American troops after more than three years' imprisonment have returned to duty.

The activities of the National Institute of Health, the research branch of the Public Health Service, are divided among nine coordinate units, the most recently established unit being the research grants office created under authority of Public Law 410. Another of the nine units is the National Cancer Institute. The Rocky Mountain Laboratory at Hamilton, Mont. which manufactured vaccines against spotted fever, typhus and yellow fever, is the sole producer of yellow fever vaccine in North America.

The graduate course on the study of continuous caudal analgesia for obstetrics, started in 1913 in cooperation with the Jefferson Medical College and the Philadelphia Lying-In Hospital, was transferred Dec. 1, 1945 to the University of Tennessee College of Medicine, Memphis. Two medical officers assigned there had by the end of the fiscal year supervised 950 continuous caudal analgesias in obstetrics and trained 250 physicians and 50 nurses in this technic. During this assignment at Philadelphia, Public Health Service officers supervised the administration of doses of caudal analgesia to 3,600 patients and trained 650 physicians and 50 nurses in the technic. The hospital division of the Public Health Service continued to provide professional care for the twenty-six marine hopitals, varying in size from 25 to 875 beds. Intern training approved by the Council on Medical Education and Hospitals of the American Medical Association is available in ten of the marine hospitals, and a total of 104 recent graduates completed this training during 1946.

During the year, for the first time, plague was diagnosed in rodents in Nebraska and Kansas and was also found among field rodents in Bannock County, Idaho, and Medicine Bow National Forest, Wyoming. The health department of California reported field rodents in several counties, and infected rodents were again found in certain districts on the island of Hawaii.

During the fiscal year a total of 760,000 new cases of venereal disease were reported from all sources to state and territorial health departments, an increase of 12.4 per cent over the previous year.

Numerous other activities of the Public Health Service are disclosed in this the seventy-fourth annual report of the U. S. Public Health Service and the one hundred and forty-eighth year of this organization's existence.

NAVY

SUSPEND PROFESSIONAL EXAMINATIONS FOR ACTING ASSISTANT SURGEONS

Secretary of the Navy James Forrestal has authorized the Bureau of Medicine and Surgery to suspend the professional examination of candidates for appointment to the regular Navy Medical Corps in the grade of Acting Assistant Surgeon. Determination of applicants' qualifications will henceforth be based on physical examination, personal interview and a review of the credentials of their officially compiled records. Suspension of the professional examination of applicants for the grade of Acting Assistant Surgeon now makes it possible for the applicants to be processed by the offices and branch offices of Naval Officer Procurement nearest them. Heretofore the professional examinations have been held at designated naval hospitals, often making it necessary for candidates to travel distances expending their time and money to take the examinations during a period of five days. It is to eliminate these undesirable features of procurement that the suspension of the professional examination has been effected.

Under present plans all phases of procurement processing, including physical examination, interview and compilation of credentials, will be accomplished by the offices of Naval Officer Procurement and their branches. A board convened in the Navy Department will review the reports and credentials submitted by the Procurement Offices and make final determination as to the physical and professional qualifications of candidates.

Suspension of the professional examinations as a part of the qualification procedure for appointment in no way lessens the standards prescribed for those applying for appointments as Acting Assistant Surgeons in the Navy Medical Corps, nor does it in any manner affect the professional examinations required of candidates for appointment to the grade of Assistant Surgeon following completion of internship. The revised procurement procedure does not alter the provision that candidates must have completed the third year of medical school in order to establish eligibility to apply for appointment as Acting Assistant Surgeon.

The intern training conducted in U. S. Naval Hospitals is rotating in character and of twelve months duration. Such naval hospitals as have applied for approval are now fully approved by the Council on Medical Education and Hospitals of the American Medical Association.

GENERAL HAWLEY LECTURES AT MEDICAL CENTER

The sixth in the series of lectures at the Naval Medical Center, Bethesda, Md., February 27 was given by Major Gen. Paul R. Hawley, medical director of the Veterans Administration, on the subject "Knowledge Gained with Respect to the Care of Casualties During the Late War." General Hawley during World War II was chief surgeon of the United States forces in the British Isles and later chief surgeon for the European Theater of Operations. Invitations to these lectures are extended to officers of the Army and Navy Medical Corps, Public Health, Veterans Administration and civilian physicians of the District of Columbia and Montgomery County.

MISCELLANEOUS

SALE OF SURPLUS MEDICAL SUPPLIES

The War Assets Administration announces, beginning February 10, a fixed price sale of surplus government property under the following general classifications: (1) surgical, medical and orthopedic appliances; (2) surgical and medical instruments, except diagnostic; (3) medical diagnostic apparatus and equipment; (4) hospital utensils.

This proprety is being offered to priority claimants, including veterans of World War II, and to the general public. Certified veterans of World War II should submit their orders in duplicate with their certificate. Veterans purchasing as dealers, jobbers or distributors, except exporters, must submit proof that they are financially responsible and have the necessary storage facilities and operate with proper permits and licensed to handle the property purchased and that they are not making drop sales of surplus property. It is necessary for veterans now holding certificates to purchase for resale to be recertified, and to submit the recertified certificate with their order to the Nashville Regional Office, Consolidated Vultee Building, Nashville, Tenn. (Reference Special Offering NVO-47-198, Feb. 7, 1947), which will give the location of these sales in Tennessee.

The War Assets Administration announces also the following sales of surplus government medical property:

Regional Office, 1409 Second Avenue, Seattle, bids closing March 10. Among the articles for sale are operating knives, bandages and first aid packets.

Little Rock, Arkansas Office, sale closes March 15. Among articles for sale are laboratory equipment, surgical dressings, eye, ear, nose and throat equipment, hospital equipment, surgical instruments, including sutures, and medical equipment.

Boston Regional Office, 600 Washington Street, Boston 11, sale closes March 14. Items for sale are sterilizers, surgeon's needles, duodenal tubes, extension apparatus, irrigators, hot water and ice bags and x-ray tables. Another sale announced by the Boston Regional Office closing March 24 includes electric vacuum pumps, surgical forceps and scissors, canvas litters, sterilizers, tissue retractor, operating knives, transformer for x-ray field unit, instrument cabinets and tables, hospital chairs, bandages and oak nurse's desks.

Omaha Regional Office, 501 W. O. W. Building, Omaha, sale closing March 12, includes x-ray field units, surgical instruments, therapeutic and operating lamps, instrument cabinets, food carts, bedside tables, folding oxygen tents, wheel chairs, sterilizers, audiometer and autoclaves.

Louisville Regional Office, 412 West Market Street, Louisville, Ky. Orders received after March 11 will be filled from remaining inventories on a first come first served basis. Included in the articles for sale are bougies, operating knives, bandages, catheters, trial lens cases, bone chisels, curets, periosteal elevators, surgical forceps, first aid kits, Steinmann pins, splints, stethoscopes, surgical sutures and a Kirchner wire drill.

War Assets Administration, Birmingham, Ala.: Immediately available for sale are the following items: cassette changer, stereoscopic upright, pedestal adjustable, magnetically controlled for remote synchronous operation with stereoscopic shift on table stand.

Physicians who are veterans have certain priority rights in purchasing this equipment.

ARTIFICIAL LIMBS WITH SUCTION SOCKETS

The Committee on Artificial Limbs of the National Research Council is supporting a program of research and development in fitting artificial limbs with suction sockets for above-knee amputees. The suction method of securing the artificial leg to the stump, although the subject of a United States patent in 1863, was apparently not used extensively until about seventy years later, when German limb makers began fitting such limbs to patients. Many successful cases were observed in Germany in the spring of 1946 by members of the Army Surgeon General's Commission on Amputation and Prostheses.

The committee has secured the cooperation of a number of limb manufacturers in various parts of the country in exploring the problem to determine particularly the factors contributing to the successful fitting and wearing of the prosthesis. By experimenting in several geographic locations it is hoped to determine whether there may be any adverse effects of climate on the wearing of such limbs. Each limb manufacturer engaged in the work has available an orthopedic surgeon as consultant who has been appointed by the Committee on Artificial Limbs. All technical information in possession of the committee is being made available to the manufacturers.

Although results thus far obtained in selected cases are highly encouraging, it should be made clear that the method is in the experimental stage and that it has not become standardized. A preliminary report will be prepared by the committee as soon as sufficient data have been obtained and analyzed.

The committee emphasizes that it has not approved the method for general use. Patients to be fitted should be selected only under the supervision of a competent surgeon and should be assured that the limb fitter is thoroughly informed about the fitting and construction of suction sockets.

PHYSICIANS SEPARATED FROM SERVICE

ARMY MEDICAL CORPS OFFICERS RECOMMENDED FOR/OR RELIEVED FROM ACTIVE DUTY

Alabama

Cummins, Samuel D.	Reform
Dominick, Thomas B.	Tuscaloosa
Elliot, Thomas C.	Butler
Farish, Clarence G.	Moulton
Garrett, James D.	Montgomery
Hardwick, James L.	Slocomb
Rouse, Clyde C.	Mobile
Wheeler, Nicholas A. Jr.	Lafayette
Woods, Thomas B. Jr.	Dothan

California

Bidwell, Robert R.	Los Angeles
Binkley, Frank C.	Los Angeles
Demangus, Robert X.	Los Angeles
Gassman, Frank C.	San Francisco
Glickman, Milton	Los Angeles
Hunnicutt, Arthur J.	Oakland
Kelly, Robert F.	Los Angeles
Nathanson, Harvey	Los Angeles
Potasz, Thomas M.	Los Angeles
Tetzlaff, Fred M.	Merced
Walt, Richard W.	Los Angeles
Weiss, Benjamin J.	Santa Monica
Wright, Sydney T.	Selma
Young, Erwin L.	San Diego

Colorado

Boissevain, Charles H.	Colorado Springs
Brandenburg, Frederick H.	Denver
Bricker, John W.	Denver
Fricke, Fred J.	Denver
Gersh, Malcolm	Denver
Giffin, Glenn O.	Littleton
Greenberg, Julius R.	Salida
Hays, Alan L.	Sterling
Luparello, Thomas G.	Denver
Scott, Paul N.	Denver
Terry, Howard L.	Pueblo
Woodward, Harry W.	Colorado Springs

Florida

Britt, Reddin	St. Augustine
Cooke, Francis N.	Cocoa
Groszberg, Desiderius	Lake Worth
Hanson, Karl B.	Miami
Hughes, Victor A.	Jacksonville
Keiser, Robert P.	Hollywood
Preston, Edwin P.	Miami Beach
Scott, Douglas G.	Altamonte Springs
Smith, Michael	W. Palm Beach

Georgia

Ailts, Bernard H.	Atlanta
Branan, Fred H. Jr.	Camilla
Conner, George R.	Columbus
Davis, Marvin L.	Macon
Gilbert, Warren M.	Rome
Krugman, Philip I.	Atlanta
Looper, Ben K.	Dalton
Marks, Maurice I. Jr.	Atlanta
Scurry, Ralph B.	Covington
Wagnon, George N.	Atlanta

Illinois

Adler, Arthur A.	Chicago
Dado, Albert P.	Chicago
Frankel, Joseph J.	Maywood
Freeman, Bromley S.	River Forest
Gleason, Michael	Mendota
Haynes, Walter G.	Chicago
Hoernschemeyer, Joseph L.	Granite City
Jenkinson, David L.	Chicago
Kooperman, Myer	Chicago
Kostrubala, Joseph G.	Chicago
Mann, Lawrence S.	Chicago
Mohlenbrock, William D.	Murphysboro
Nuzie, Samuel B.	Mattoon
Provenzano, Joseph A.	Geneva
Reid, Harold E.	Oak Park
Sanovic, John V.	Harvey
Taylor, Kenneth R.	Chicago
Weatherly, Howard E.	Chicago

Indiana

Adams, Donald R.	Indianapolis
Billings, Elmer R.	Washington
Brown, Archie E.	Indianapolis
Colglazier, Donald L.	Salem
Craig, Robert A.	Gary
Dettloff, Frederick R.	Cloverdale
Gammieri, Louis R.	Indianapolis
Kresler, Leon E.	Rensselaer
Manuel, Robert M.	Ft. Wayne
Sales, Louis M.	Indianapolis
Scott, George E.	Frankfort
Smullen, Willard C.	Rushville
Weaver, Robert H.	Elkhart
White, Harvey E.	Martinsville

Kansas

Ashley, Samuel G.	Chanute
Hildyard, Victor H.	Kansas City
Mau, Walter	Leavenworth
Moran, Charles T.	Ark City
Orbison, James L.	Bronson
Young, Robert S.	Ft. Scott

Louisiana

Des Ormeaux, George N.	Lafayette
Hamilton, William H.	Downsville
Kennedy, David W.	Vivian
Reimers, Arthur F.	New Orleans
Rosenthal, Melvin M.	New Orleans
White, James A. Jr.	Alexandria

Massachusetts

Bonaccorso, Michael L.	Boston
Brown, Harold	Boston
Cohen, Samuel L.	Boston
Dalton, Stephen J.	Brookline
Foster, Sawyer	Newton Highlands
Frisch, Joseph	Vineyard Haven
Grodberg, Burton C.	Malden
Harasimowicz, Paul P.	Gardner
Henderson, John W. Jr.	Worcester
Mason, Robert L.	Wellesley Hills
Mower, Jack H.	Brookline
Riccardi, Louis S.	Marlboro
Ryan, John J.	Waltham
Schlosberg, Charles	Brookline
Silbert, Nathan E.	Somerville
Thacher, Henry C.	Milton
Thompson, Richard H.	Salem
Wellington, Mark S.	Amherst
Whitten, James F.	Amesbury
Yesner, Raymond	Boston

Michigan

Baden, David D.	Battle Creek
Belknap, Warren F.	Detroit
Braun, Lionel	Detroit
Cook, Eugene L.	Ann Arbor
Fox, Morris E.	Dearborn
Goss, Samuel B.	Ann Arbor
Griep, Arthur H.	Cadillac
Hammonds, Everett E.	Birmingham
Helzerman, Ralph F.	Tecumseh
Horowitz, John B.	Detroit
Kirker, Findlay O.	St. Clair
Lahti, Paul T.	Marquette
Marsh, Roland G. B.	Tecumseh
Reichling, Raymond J. Jr.	Detroit
Rothman, Herman R.	Detroit
Sanford, Hawley S.	Detroit
Snyder, Charles E.	Swartz Creek
Weller, John M.	Ann Arbor

Minnesota

Bank, Harry E.	Minneapolis
Bellis, Carroll J.	St. Paul
Cook, Carroll K.	St. Paul
Iverson, Herman A.	Rochester
Kelly, John P.	So. Minneapolis
Monserud, Nels O.	Cloquet
Rosenfield, Abraham B.	Hibbing
Sarnecki, Merchislaw M.	St. Paul

Mississippi

Geisenberger, I. Fred	Natchez
Hall, Donald S.	Vicksburg
Jones, William H.	French Camp
Terrell, Kenneth D.	Prentiss
Willey, Loys W.	Whitfield
Wingo, Oliver B.	Toccopola

Missouri

Bradley, Bennie H.	Richmond Heights
Briscoe, John R.	Maplewood
Campbell, Wayland E. Jr.	Kansas City
Coldwater, Kenneth B.	St. Louis
Cooper, Maurice E.	Columbia
Faucett, Robert L.	Kansas City
Gay, George W.	St. Louis
Gitt, Joseph J.	St. Louis
Griffith, Harry M.	Richmond
Jordan, Robert A.	Eldon
Kasiske, Walter B.	La Plata
Kuenkel, Victor H.	St. Louis
Mantell, Francis J.	Excelsior Springs
Parker, Harold G.	Kansas City
Thornell, Harold E.	St. Louis
Wakefield, Franklin H.	Kansas City
Wessling, Alfred L.	Bethany
Wilcoxen, William B.	Bowling Green

Montana

Cooney, Theodore W.	Helena
Dale, Earl E.	Wibaux
Gold, Morris A.	Butte

Nebraska

Black, Eugene W.	Gering
Kenner, William C.	Nebraska City
Larson, George E. Jr.	Omaha
Lauridsen, James	Callaway
Markle, John G.	Ithaca
Martin, Paul J.	Omaha
Morgan, Robert J.	Alliance
Reimers, Wilbur L.	Big Springs
Stoner, Maurice E.	Omaha
Sutton, Bruce R.	Minden

New Jersey

Boey, Chew S.	Newark
Brauer, Earle W.	W. New York
Brezinski, Edward J.	Perth Amboy
Cowan, Joseph H.	Jersey City
Coxson, Harold P.	Stratford
Crawford, John W.	Bedminster
Cryder, Millard	Cape May
Dailey, Edward S.	So. Orange
DelMauro, Alphonse	Paterson
Feldman, Frank H.	Newark
Feldman, Harry A.	Newark
Fenichel, Benjamin	Newark
Fischbein, Martin M.	Newark
Frank, Ulysses M.	Newark
Freeman, George C.	Millington
Gittelman, Morton	Elizabeth
Halpern, William	Woodbine
Hnat, Frederick	Elizabeth
Hoffman, David B.	Newark
Horland, Aaron H.	Newark
Hunziker, Peter G.	Hackensack
Jablonski, John J.	Camden
Mulligan, John J.	Harrison
Reinartz, Paul V.	Bloomfield
Resnick, Nathan	Newark
Rosenberg, Harold	Bayonne
Sabia, Daniel J.	Union City
Samter, Max	Merchantville
Scalera, John F.	Newark
Scielzo, Nicholas F.	Paterson
Sharbaugh, George B.	Trenton
Silich, Robert L.	Weehawken
Simon, Henry	Newark
Taylor, Raymond A.	Lakewood
Thornley, William F.	Maplewood
Waller, John V.	Trenton

PHYSICIANS SEPARATED FROM SERVICE

New York

Alvermann, Emil	Bath
Basirico, Paul J.	Brooklyn
Bight, Curtis P.	Kingston
Blaine, Robert	Brooklyn
Blitzman, Louis	New York
Blum, Morris	New York
Bologna, Angelo R.	Bronx
Brown, Marshall S. Jr.	New York
Coley, Bradley L.	New York
Comstock, Carl R. Jr.	Saratoga Springs
Cooke, Crispin	New York
Cooney, Donald V.	Flushing
Cooper, Anthony J.	Williamsville
Cunningham, John R.	Binghampton
D'Angelo, Joseph G.	Brooklyn
Davis, Cyrus E.	Albany City
De Luca, Frank J.	Brooklyn
Dennis, Benjamin F.	Garden City
Diamond, Norman	Bronx
Dicara, Leo V.	Bronx
Donat, Theodore L.	Brooklyn
Eckel, John H.	N. Hoosick
Edmunds, James N.	Flushing
Ehrlich, Herman	Mount Vernon
Eisenberg, Harold B.	Brooklyn
Eisenberg, Stuart J.	Schnectady
Farabaugh, Robert E.	New York
Farugia, Joseph V.	Niagara Falls
Feigenbaum, Harry L.	Brooklyn
Frank, Samuel S.	Brooklyn
Franklin, John E.	New York
Fried, Julian J.	New York
Friedman, Abraham I.	Bronx
Gasner, Walter G.	Mt. Vernon
Geller, Morton B.	Brooklyn
Gifford, Allen G.	Troy
Glantz, William M.	New York
Gluckman, Earl C.	Yonkers
Gudis, Seymour	Brooklyn
Halperin, Herman J.	New York
Hausner, Erich P.	Amsterdam
Horowitz, Hyman M.	Brooklyn
Hudes, Nathan	New Gardens, L. I.
Huebschwerlen, Arthur S.	Kenmore
Hulnick, Alvin	Rosebank, S. I.
Johnson, Herbert B.	Kingston
Joseph, Julius M.	Bronx
Kasin, Edwin	Brooklyn
Kavovit, Charles	New York
Klemes, Isadore S.	Long Beach
Kotrnetz, Hans A. W.	Herkimer
Kritchman, Ben	Brooklyn
Landau, Frederick L. Jr.	Bronxville
Lerner, Allan	Brooklyn
McCormick, Robert C.	Ithaca
Manganaro, Joseph A.	Brooklyn
Marder, Sidney S.	Bronx
Margolin, Samuel	Bronx
Marinello, Joseph F.	Brooklyn
Pasekoff, Meyer J.	New York
Petry, William A.	Catskill
Preische, Henry F.	Yonkers
Reid, Loudon C.	Bronxville
Reiss, Alexander J.	Brooklyn
Resnick, Eber	Rochester
Riwchun, Meyer H.	Buffalo
Romm, Barnet I.	Brooklyn
Roswit, Bernard	Brooklyn
Rudel, James	Bronx
Salberg, Seymour R.	Bath
Salter, Hiram P. Jr.	Bronxville
Schindelheim, Samuel M.	Brooklyn
Schlachter, Irving S.	Brooklyn
Schlesinger, Henry A.	Brooklyn
Schneck, Jack I.	New York
Smith, Frank P.	Rochester
Surls, Joseph K.	Scarsdale
Taylor, Lawrence E.	New York
Terris, Robert S.	Mt. Kisco
Wallace, James E.	Brooklyn
Weiss, Harry	Flushing
Willinger, Hyman	New York
Zaretzki, Louis E.	Brooklyn
Zirpoli, Robert M.	Long Island

North Carolina

Abernethy, Paul M.	Forest City
Chambliss, John R.	Rocky Mount
Forrest, Daniel E.	Hillsboro
Fritz, William A.	Hickory
Heath, Malcolm G.	Greensboro
Jordan, William P.	Windsor
Knoefel, Arthur E.	Black Mountain
Parker, Carl P. Jr.	Seaboard
Plonk, George W.	Kings Mountain
Tyner, Kenneth V.	Winston-Salem

Ohio

Abramson, William	Dayton
Baird, Paul E.	Brecksville
Brandeberry, Nelson A.	Springfield
Canfield, Irving H.	Columbus
Cole, Harold N. Jr.	Shaker Heights
Cooke, Robert E.	Harrison
Gillespie, David G.	Bellaire
Gledhill, Joseph M.	Warren
Goldblatt, Samuel	Cincinnati
Goldcamp, Richard R.	Youngstown
Grove, Paul C.	Newark
Haffner, Frederick D.	Cincinnati
Halfhill, James W. Jr.	Lima
Hantman, Meyer	Cleveland
Hoecker, Robert H.	Mt. Vernon
Holsinger, Robert E.	Dayton
Koenigshoff, John A.	Cleveland
Kravetz, Irwin	Chillicothe
Wolfe, Clement V.	Columbus
Zeit, Paul R.	Univ. Hts., Cleveland

Oklahoma

Bailey, William H.	Oklahoma City
Beddoe, Harold L.	Tulsa
Bell, Joseph P.	Welch
Berger, Elmer S.	Oklahoma City
Hubbard, William E.	Stillwater
Ingle, John D.	Oklahoma City
Pollard, James E.	Lovell
Reichert, Rudolph J.	Moore
Straw, Kenneth	Hobart
Walker, James R.	Enid

Pennsylvania

Abramovitz, Leonard J.	Pittsburgh
Biele, Albert M.	Scranton
Bonnett, John C.	Glen Rock
Coleman, Donald K.	Bethlehem
Davis, John W.	Philadelphia
Davis, Perk L.	Bryn Mawr
DeCherney, Herman G.	Philadelphia
Falk, Edward C.	Pittsburgh
Febbraro, Anthony A.	Philadelphia
Fertig, Henry H.	Newton Square
Gellman, Milton B.	Philadelphia
Griffith, Benjamin F.	Kingston
Hamington, Ralph W.	Uniontown
Henderson, Ellsworth W.	Beaver
Johnston, Robert H.	Lansdowne
Kelly, John F.	Scranton
Kelso, Samuel N. Jr.	Lewistown
Kinnunen, John M.	Meadville
Klein, Walter	Pittsburgh
Konopka, Benjamin S.	Scranton
Krug, Emil C. III	Wilkinsburg
Lentz, Robert E.	Allentown
McAnally, William F.	Pittsburgh
Mattern, Russell K.	Philadelphia
O'Donnell, Harold G.	Girardville
Patterson, Arthur J.	Waynesburg
Rosenthal, Ludwig T.	Pittsburgh
Schwartz, Robert	Pittsburgh
Shadle, John W.	Butler
Shore, Paul D.	Philadelphia
Smith, Jay D.	Harrisburg
Steppacher, Lester G. Jr.	Philadelphia
Them, Albert H. Jr.	Philadelphia
Theodos, Peter A.	Philadelphia
Thompson, David I.	Carlisle
Winheld, Edward B.	Philadelphia
Zimmerman, Richard P.	Hollsopple
Zukoski, Frank J.	Scranton

Rhode Island

Agnelli, Freeman B.	Westerly
Brown, Abe A.	Providence
Ferguson, Duncan H. C. Jr.	Pawtucket
Fish, David J.	Howard
Malone, John M.	Portsmouth

South Carolina

Baker, Robert J.	Charleston
DeLoache, William R.	Camden
Green, James T. Jr.	Columbia
Perrin, Thomas S. Jr.	Spartanburg
Thames, William H.	Greenville
Zimmerman, Solomon L.	Columbia

Tennessee

Anderson, James B.	Memphis
Binns, James F.	Nashville
Correll, William C.	Memphis
Dings, Parley M.	Briceville
Frist, Thomas F.	Nashville
Rogers, Edgar S.	Dyersburg
Settle, Roy J.	Madisonville
Tilley, William K.	Lebanon

Texas

Bishop, William A. Jr.	Wichita Falls
Burk, Houston M.	Dallas
Connolly, Frank E.	Houston
Cooper, Fred	San Antonio
Cunningham, George N.	Houston
Gilliam, Cecil H.	Galveston
James, George T.	Fort Worth
Jones, Thomas R.	San Antonio
Kelton, William W. Jr.	Austin
Kern, John C.	Sherman
Kerr, Charles D.	Houston
Kimbro, Robert W.	Cleburne
McCrory, Thomas M.	Dalhart
Martin, Clarence R.	Houston
Mason, Eugene E.	Dallas
Morphis, Oscar L.	Dallas
Thaddeus, Aloysius P.	San Antonio
Walkes, Ernest E.	Amarillo

Utah

Dovey, Edward G.	Salt Lake City
McMain, William A. Jr.	Salt Lake City
Thomas, Madison H.	Logan

Virginia

Adelman, Solomon	Roanoke
Cole, Lee M. Jr.	Christienburg
Davis, Lawrence C.	Hampton
Detwiler, Robert H.	Arlington
Gaylord, Charles F.	Staunton
German, John D.	Charlottesville
Keppler, Charles B.	Richmond
Malmstead, Chester W.	Hampton
Miller, Benjamin	Newport News
Ulmer, Jack L.	Richmond

Washington

Case, Edward F.	Seattle
Foskett, Harold S.	Ritzville
Kempinsky, Warren H.	Seattle
Mares, Lumir M.	Wenatchee
Seelye, Walter B.	Seattle
Shikany, Samuel E.	Spokane
Simmonds, Frank L.	Seattle

Wisconsin

Collins, Eugene G.	Dousman
Dimond, Waldo B.	Madison
Drury, Ernest M.	New Richmond
Fritz, William H.	Milwaukee
Goldman, Irving R.	Milwaukee
Johnston, Russell C.	La Crosse
Klieger, Samuel	Milwaukee
McCormick, Donald W.	Madison
Nissenbaum, James	Appleton
Sanfelippo, Anthony J.	Milwaukee
Schiek, Irving E. Jr.	Rhinelander
Walker, John P.	Milwaukee
Wallber, Frederick E.	Milwaukee

PHYSICIANS SEPARATED FROM SERVICE

ARMY MEDICAL CORPS OFFICERS RECOMMENDED FOR/OR RELIEVED FROM ACTIVE DUTY

Alabama

Cummins, Samuel D.............Reform
Dominick, Thomas B.........Tuscaloosa
Elliot, Thomas C...............Butler
Farish, Clarence G..........Moulton
Garrett, James D...........Montgomery
Hardwick, James L.............Slocomb
Rouse, Clyde C..................Mobile
Wheeler, Nicholas A. Jr.......Lafayette
Woods, Thomas B. Jr...........Dothan

California

Bidwell, Robert R.........Los Angeles
Binkley, Frank C...........Los Angeles
Demangus, Robert X.......Los Angeles
Gassman, Frank C.........San Francisco
Glickman, Milton..........Los Angeles
Hunnicutt, Arthur J.............Oakland
Kelly, Robert F...........Los Angeles
Nathanson, Harvey........Los Angeles
Potasz, Thomas M.........Los Angeles
Tetzlaff, Fred M...............Merced
Walt, Richard W...........Los Angeles
Weiss, Benjamin J.........Santa Monica
Wright, Sydney T...............Selma
Young, Erwin L.............San Diego

Colorado

Boissevain, Charles H...Colorado Springs
Brandenburg, Frederick H.......Denver
Bricker, John W................Denver
Fricke, Fred J.................Denver
Gersh, Malcolm.................Denver
Giffin, Glenn O.................Littleton
Greenberg, Julius R.............Salida
Hays, Alan L....................Sterling
Luparello, Thomas G...........Denver
Scott, Paul N...................Denver
Terry, Howard L.................Pueblo
Woodward, Harry W...Colorado Springs

Florida

Britt, Reddin............St. Augustine
Cooke, Francis N.................Cocoa
Groszberg, Desiderius......Lake Worth
Hanson, Karl B...................Miami
Hughes, Victor A...........Jacksonville
Keiser, Robert P.............Hollywood
Preston, Edwin P.........Miami Beach
Scott, Douglas G.....Altamonte Springs
Smith, Michael..........W. Palm Beach

Georgia

Ailts, Bernard H...............Atlanta
Branan, Fred H. Jr.............Camilla
Conner, George R.............Columbus
Davis, Marvin L.................Macon
Gilbert, Warren M................Rome
Krugman, Philip I...............Atlanta
Looper, Ben K...................Dalton
Marks, Maurice I. Jr...........Atlanta
Scurry, Ralph B.............Covington
Wagnon, George N.............Atlanta

Illinois

Adler, Arthur A.................Chicago
Dado, Albert P..................Chicago
Frankel, Joseph J..............Maywood
Freeman, Bromley S.......River Forest
Gleason, Michael..............Mendota
Haynes, Walter G...............Chicago
Hoernschemeyer, Joseph L...Granite City
Jenkinson, David L.............Chicago
Kooperman, Myer...............Chicago
Kostrubala, Joseph G..........Chicago
Mann, Lawrence S.............Chicago
Mohlenbrock, William D....Murphysboro
Nuzie, Samuel B...............Mattoon
Provenzano, Joseph A...........Geneva
Reid, Harold E...............Oak Park
Sanovic, John V..................Harvey
Taylor, Kenneth R..............Chicago
Weatherly, Howard E..........Chicago

Indiana

Adams, Donald R..........Indianapolis
Billings, Elmer R...........Washington
Brown, Archie E...........Indianapolis
Colglazier, Donald L...............Salem
Craig, Robert A....................Gary
Dettloff, Frederick R.........Cloverdale
Gammieri, Louis R.........Indianapolis
Kresler, Leon E...............Rensselaer
Manuel, Robert M...........Ft. Wayne
Sales, Louis M.............Indianapolis
Scott, George E...............Frankfort
Smullen, Willard C...........Rushville
Weaver, Robert H...............Elkhart
White, Harvey E...........Martinsville

Kansas

Ashley, Samuel G.............Chanute
Hildyard, Victor H..........Kansas City
Mau, Walter..................Leavenworth
Moran, Charles T.............Ark City
Orbison, James L..............Bronson
Young, Robert S...............Ft. Scott

Louisiana

Des Ormeaux, George N.......Lafayette
Hamilton, William H.........Downsville
Kennedy, David W...............Vivian
Reimers, Arthur F.........New Orleans
Rosenthal, Melvin M.......New Orleans
White, James A. Jr...........Alexandria

Massachusetts

Bonaccorso, Michael L..........Boston
Brown, Harold..................Boston
Cohen, Samuel L...............Boston
Dalton, Stephen J.............Brookline
Foster, Sawyer......Newton Highlands
Frisch, Joseph..........Vineyard Haven
Grodberg, Burton C.............Malden
Harasimowicz, Paul P...........Gardner
Henderson, John W. Jr........Worcester
Mason, Robert L.........Wellesley Hills
Mower, Jack H...............Brookline
Riccardi, Louis S............Marlboro
Ryan, John J..................Waltham
Schlosberg, Charles..........Brookline
Silbert, Nathan E..........Somerville
Thacher, Henry C...............Milton
Thompson, Richard H.............Salem
Wellington, Mark S...........Amherst
Whitten, James F............Amesbury
Yesner, Raymond................Boston

Michigan

Baden, David D...........Battle Creek
Belknap, Warren F............Detroit
Braun, Lionel..................Detroit
Cook, Eugene L..............Ann Arbor
Fox, Morris E...............Dearborn
Goss, Samuel B.............Ann Arbor
Griep, Arthur H...............Cadillac
Hammonds, Everett E.......Birmingham
Helzerman, Ralph F...........Tecumseh
Horowitz, John B...............Detroit
Kirker, Findlay O.............St. Clair
Lahti, Paul T..................Marquette
Marsh, Roland G. B...........Tecumseh
Reichling, Raymond J. Jr.........Detroit
Rothman, Herman R............Detroit
Sanford, Hawley S.............Detroit
Snyder, Charles E.........Swartz Creek
Weller, John M.............Ann Arbor

Minnesota

Bank, Harry E............Minneapolis
Bellis, Carroll J.................St. Paul
Cook, Carroll K.................St. Paul
Iverson, Herman A............Rochester
Kelly, John P..........So. Minneapolis
Monserud, Nels O...............Cloquet
Rosenfield, Abraham B.........Hibbing
Sarnecki, Merchislaw M.......St. Paul

Mississippi

Geisenberger, I. Fred..........Natchez
Hall, Donald S...............Vicksburg
Jones, William H..........French Camp
Terrell, Kenneth D............Prentiss
Willey, Loys W..............Whitfield
Wingo, Oliver B.............Toccopola

Missouri

Bradley, Bennie H....Richmond Heights
Briscoe, John R.............Maplewood
Campbell, Wayland E. Jr....Kansas City
Coldwater, Kenneth B.........St. Louis
Cooper, Maurice E............Columbia
Faucett, Robert L..........Kansas City
Gay, George W...............St. Louis
Gitt, Joseph J..................St. Louis
Griffith, Harry M.............Richmond
Jordan, Robert A...................Eldon
Kasiske, Walter B.............La Plata
Kuenkel, Victor H.............St. Louis
Mantell, Francis J.....Excelsior Springs
Parker, Harold G...........Kansas City
Thornell, Harold E............St. Louis
Wakefield, Franklin H.......Kansas City
Wessling, Alfred L.............Bethany
Wilcoxen, William B.....Bowling Green

Montana

Cooney, Theodore W.............Helena
Dale, Earl E...................Wibaux
Gold, Morris A...................Butte

Nebraska

Black, Eugene W...............Gering
Kenner, William C.......Nebraska City
Larson, George E. Jr.............Omaha
Lauridsen, James.............Callaway
Markle, John G..................Ithaca
Martin, Paul J..................Omaha
Morgan, Robert J..............Alliance
Reimers, Wilbur L.........Big Springs
Stoner, Maurice E..............Omaha
Sutton, Bruce R...............Minden

New Jersey

Boey, Chew S.................Newark
Brauer, Earle W.........W. New York
Brezinski, Edward J.......Perth Amboy
Cowan, Joseph H...........Jersey City
Coxson, Harold P.............Stratford
Crawford, John W...........Bedminster
Cryder, Millard..............Cape May
Dailey, Edward S..........So. Orange
DelMauro, Alphonse...........Paterson
Feldman, Frank H.............Newark
Feldman, Harry A.............Newark
Fenichel, Benjamin............Newark
Fischbein, Martin M...........Newark
Frank, Ulysses M..............Newark
Freeman, George C...........Millington
Gittelman, Morton............Elizabeth
Halpern, William............Woodbine
Hnat, Frederick..............Elizabeth
Hoffman, David B..............Newark
Horland, Aaron H..............Newark
Hunziker, Peter G..........Hackensack
Jablonski, John J...............Camden
Mulligan, John J..............Harrison
Reinartz, Paul V............Bloomfield
Resnick, Nathan...............Newark
Rosenberg, Harold.............Bayonne
Sabia, Daniel J.............Union City
Samter, Max..............Merchantville
Scalera, John F...............Newark
Scielzo, Nicholas F............Paterson
Sharbaugh, George B..........Trenton
Silich, Robert L............Weehawken
Simon, Henry..................Newark
Taylor, Raymond A...........Lakewood
Thornley, William F........Maplewood
Waller, John V.................Trenton

PHYSICIANS SEPARATED FROM SERVICE

New York

Alvermann, Emil	Bath
Basirico, Paul J.	Brooklyn
Bight, Curtis P.	Kingston
Blaine, Robert	Brooklyn
Blitzman, Louis	New York
Blum, Morris	New York
Bologna, Angelo R.	Bronx
Brown, Marshall S. Jr.	New York
Coley, Bradley L.	New York
Comstock, Carl R. Jr.	Saratoga Springs
Cooke, Crispin	New York
Cooney, Donald V.	Flushing
Cooper, Anthony J.	Williamsville
Cunningham, John R.	Binghampton
D'Angelo, Joseph G.	Brooklyn
Davis, Cyrus E.	Albany City
De Luca, Frank J.	Brooklyn
Dennis, Benjamin F.	Garden City
Diamond, Norman	Bronx
Dicara, Leo V.	Bronx
Donat, Theodore L.	Brooklyn
Eckel, John H.	N. Hoosick
Edmunds, James N.	Flushing
Ehrlich, Herman	Mount Vernon
Eisenberg, Harold B.	Brooklyn
Eisenberg, Stuart J.	Schenectady
Farabaugh, Robert E.	New York
Farugia, Joseph V.	Niagara Falls
Feigenbaum, Harry L.	Brooklyn
Frank, Samuel S.	Brooklyn
Franklin, John E.	New York
Fried, Julian J.	New York
Friedman, Abraham I.	Bronx
Gasner, Walter G.	Mt. Vernon
Geller, Morton B.	Brooklyn
Gifford, Allen G.	Troy
Glantz, William M.	New York
Gluckman, Earl C.	Yonkers
Gudis, Seymour	Brooklyn
Halperin, Herman J.	New York
Hausner, Erich P.	Amsterdam
Horowitz, Hyman M.	Brooklyn
Hudes, Nathan	New Gardens, L. I.
Huebschwerlen, Arthur S.	Kenmore
Hulnick, Alvin	Rosebank, S. I.
Johnson, Herbert B.	Kingston
Joseph, Julius M.	Bronx
Kasin, Edwin	Brooklyn
Kavovit, Charles	New York
Klemes, Isadore S.	Long Beach
Kotrnetz, Hans A. W.	Herkimer
Kritchman, Ben	Brooklyn
Landau, Frederick L. Jr.	Bronxville
Lerner, Allan	Brooklyn
McCormick, Robert C.	Ithaca
Manganaro, Joseph A.	Brooklyn
Marder, Sidney S.	Bronx
Margolin, Samuel	Bronx
Marinello, Joseph F.	Brooklyn
Pasekoff, Meyer J.	New York
Petry, William A.	Catskill
Preische, Henry F.	Yonkers
Reid, Loudon C.	Bronxville
Reiss, Alexander J.	Brooklyn
Resnick, Eber	Rochester
Riwchun, Meyer H.	Buffalo
Romm, Barnet I.	Brooklyn
Roswit, Bernard	Brooklyn
Rudel, James	Bronx
Salberg, Seymour R.	Bath
Salter, Hiram P. Jr.	Bronxville
Schindelheim, Samuel M.	Brooklyn
Schlachter, Irving S.	Brooklyn
Schlesinger, Henry A.	Brooklyn
Schneck, Jack I.	New York
Smith, Frank P.	Rochester
Surls, Joseph K.	Scarsdale
Taylor, Lawrence E.	New York
Terris, Robert S.	Mt. Kisco
Wallace, James E.	Brooklyn
Weiss, Harry	Flushing
Willinger, Hyman	New York
Zaretzki, Louis E.	Brooklyn
Zirpoli, Robert M.	Long Island

North Carolina

Abernethy, Paul M.	Forest City
Chambliss, John R.	Rocky Mount
Forrest, Daniel E.	Hillsboro
Fritz, William A.	Hickory
Heath, Malcolm G.	Greensboro
Jordan, William P.	Windsor
Knoefel, Arthur E.	Black Mountain
Parker, Carl P. Jr.	Seaboard
Plonk, George W.	Kings Mountain
Tyner, Kenneth V.	Winston-Salem

Ohio

Abramson, William	Dayton
Baird, Paul E.	Brecksville
Brandeberry, Nelson A.	Springfield
Canfield, Irving H.	Columbus
Cole, Harold N. Jr.	Shaker Heights
Cooke, Robert E.	Harrison
Gillespie, David G.	Bellaire
Gledhill, Joseph M.	Warren
Goldblatt, Samuel	Cincinnati
Goldcamp, Richard R.	Youngstown
Grove, Paul C.	Newark
Haffner, Frederick D.	Cincinnati
Halfhill, James W. Jr.	Lima
Hantman, Meyer	Cleveland
Hoecker, Robert H.	Mt. Vernon
Holsinger, Robert E.	Dayton
Koenigshoff, John A.	Cleveland
Kravetz, Irwin	Chillicothe
Wolfe, Clement V.	Columbus
Zeit, Paul R.	Univ. Hts., Cleveland

Oklahoma

Bailey, William H.	Oklahoma City
Beddoe, Harold L.	Tulsa
Bell, Joseph P.	Welch
Berger, Elmer S.	Oklahoma City
Hubbard, William E.	Stillwater
Ingle, John D.	Oklahoma City
Pollard, James E.	Lovell
Reichert, Rudolph J.	Moore
Straw, Kenneth	Hobart
Walker, James R.	Enid

Pennsylvania

Abramovitz, Leonard J.	Pittsburgh
Biele, Albert M.	Scranton
Bonnett, John C.	Glen Rock
Coleman, Donald K.	Bethlehem
Davis, John W.	Philadelphia
Davis, Perk L.	Bryn Mawr
DeCherney, Herman G.	Philadelphia
Falk, Edward C.	Pittsburgh
Febbraro, Anthony A.	Philadelphia
Fertig, Henry H.	Newton Square
Gellman, Milton B.	Philadelphia
Griffith, Benjamin F.	Kingston
Hamington, Ralph W.	Uniontown
Henderson, Ellsworth W.	Beaver
Johnston, Robert H.	Lansdowne
Kelly, John F.	Scranton
Kelso, Samuel N. Jr.	Lewistown
Kinnunen, John M.	Meadville
Klein, Walter	Pittsburgh
Konopka, Benjamin S.	Scranton
Krug, Emil C. III	Wilkinsburg
Lentz, Robert E.	Allentown
McAnally, William F.	Pittsburgh
Mattern, Russell K.	Philadelphia
O'Donnell, Harold G.	Girardville
Patterson, Arthur J.	Waynesburg
Rosenthal, Ludwig T.	Pittsburgh
Schwartz, Robert	Pittsburgh
Shadle, John W.	Butler
Shore, Paul D.	Philadelphia
Smith, Jay D.	Harrisburg
Steppacher, Lester G. Jr.	Philadelphia
Them, Albert H. Jr.	Philadelphia
Theodos, Peter A.	Philadelphia
Thompson, David I.	Carlisle
Winheld, Edward B.	Philadelphia
Zimmerman, Richard P.	Hollsopple
Zukoski, Frank J.	Scranton

Rhode Island

Agnelli, Freeman B.	Westerly
Brown, Abe A.	Providence
Ferguson, Duncan H. C. Jr.	Pawtucket
Fish, David J.	Howard
Malone, John M.	Portsmouth

South Carolina

Baker, Robert J.	Charleston
DeLoache, William R.	Camden
Green, James T. Jr.	Columbia
Perrin, Thomas S. Jr.	Spartanburg
Thames, William H.	Greenville
Zimmerman, Solomon L.	Columbia

Tennessee

Anderson, James B.	Memphis
Binns, James F.	Nashville
Correll, William C.	Memphis
Dings, Parley M.	Briceville
Frist, Thomas F.	Nashville
Rogers, Edgar S.	Dyersburg
Settle, Roy J.	Madisonville
Tilley, William K.	Lebanon

Texas

Bishop, William A. Jr.	Wichita Falls
Burk, Houston M.	Dallas
Connolly, Frank E.	Houston
Cooper, Fred	San Antonio
Cunningham, George N.	Houston
Gilliam, Cecil H.	Galveston
James, George T.	Fort Worth
Jones, Thomas R.	San Antonio
Kelton, William W. Jr.	Austin
Kern, John C.	Sherman
Kerr, Charles D.	Houston
Kimbro, Robert W.	Cleburne
McCrory, Thomas M.	Dalhart
Martin, Clarence R.	Houston
Mason, Eugene E.	Dallas
Morphis, Oscar L.	Dallas
Thaddeus, Aloysius P.	San Antonio
Walkes, Ernest E.	Amarillo

Utah

Dovey, Edward G.	Salt Lake City
McMain, William A. Jr.	Salt Lake City
Thomas, Madison H.	Logan

Virginia

Adelman, Solomon	Roanoke
Cole, Lee M. Jr.	Christienburg
Davis, Lawrence C.	Hampton
Detwiler, Robert H.	Arlington
Gaylord, Charles F.	Staunton
German, John D.	Charlottesville
Keppler, Charles B.	Richmond
Malmstead, Chester W.	Hampton
Miller, Benjamin	Newport News
Ulmer, Jack L.	Richmond

Washington

Case, Edward F.	Seattle
Foskett, Harold S.	Ritzville
Kempinsky, Warren H.	Seattle
Mares, Lumir M.	Wenatchee
Seelye, Walter B.	Seattle
Shikany, Samuel E.	Spokane
Simmonds, Frank L.	Seattle

Wisconsin

Collins, Eugene G.	Dousman
Dimond, Waldo B.	Madison
Drury, Ernest M.	New Richmond
Fritz, William H.	Milwaukee
Goldman, Irving R.	Milwaukee
Johnston, Russell C.	La Crosse
Klieger, Samuel	Milwaukee
McCormick, Donald W.	Madison
Nissenbaum, James	Appleton
Sanfelippo, Anthony J.	Milwaukee
Schiek, Irving E. Jr.	Rhinelander
Walker, John P.	Milwaukee
Wallber, Frederick E.	Milwaukee

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

CALIFORNIA

Popular Medical Lectures.—Stanford University School of Medicine, San Francisco, will offer a series of popular medical lectures, illustrated, during March and April at Lane Hall on Friday evenings: March 7, "New Eyes for Old: Corneal Transplants," by Dr. Max Fine; March 21, "The War on Cancer," by Drs. David A. Wood, L. Henry Garland and Leonard G. Dobson; April 11, "Delinquency and Mental Health in a Changing World," by Dr. Hale F. Shirley, and April 25, "Contagion from Foreign Lands," by Dr. Rodney R. Beard.

Clinics for Children in Trailer Camps.—The Santa Clara County Health Department is arranging mobile clinics to provide service for children in rural areas. Well baby clinics will be held in a medical trailer made available by the Agricultural Workers Health and Medical Association through the state department of public health. Children living in some 580 trailer camp family units in rural areas of the county will be served in the hope of reducing the high incidence of diphtheria, diarrhea and other communicable diseases as well as the high infant mortality rate in this group of the population.

Personal.—William W. Greulich, Ph.D., professor of anatomy, Stanford University School of Medicine, San Francisco, and director of the Brush Foundation, has returned from Australia and New Zealand, where he lectured under the auspices of various postgraduate committees to chapters of the British Medical Association.——Dr. Wayland A. Morrison, chief surgeon on the Santa Fe Railway Hospital staff since 1921, has been appointed to the newly created position of medical director of the Santa Fe Railway, with headquarters in Los Angeles. He is a graduate of Stanford University, 1910, and Harvard Medical School, 1914, and is at present a commander in the Naval Reserve. As medical director of the railroad, Dr. Morrison will supervise the health of some 68,000 employees.

CONNECTICUT

Anatomist Receives Oxford Award.—Leon S. Stone, Ph.D., Bronson professor of comparative anatomy, Yale University School of Medicine, New Haven, will receive the Robert W. Doyne Memorial Medal, an annual award of the Oxford Ophthalmological Congress in England. Dr. Stone, who will go to England next summer to address the congress at Keble College, Oxford, was given the award in recognition of his work on retinal regeneration and vision experiments in transplanted eyes.

Management-Physician Conferences.—To further the interest of industrial managers in problems of employee health, the Industrial Health Committee of the Connecticut State Medical Society is sponsoring a program of management-physician conferences. A part of the society's public relations program, the conferences will be held at various industrial plants throughout the state. Dr. C. Frederick Yeager, physician for the Remington Rand Company, Bridgeport, is chairman of the committee.

ILLINOIS

President of Abbott Laboratories Dies.—Rolly M. Cain, president and general manager since March 1946 of Abbott Laboratories, North Chicago, Ill., died February 21 at Phoenix, Ariz., aged 65, of a heart attack. Mr. Cain was also a director of the American Pharmaceutical Manufacturers Association for a number of years and was its president in 1923-1924.

Scholarships to Provide Rural Physicians.—The Illinois State Medical Society has made public a proposal that the state legislature establish a revolving fund of $50,000 a year for ten years for education of physicians to serve in rural areas, as a means of relieving the shortage of doctors in downstate Illinois. The Committee on Rural Medical Service of the society (Dr. Harlan A. English, Danville, chairman) has been studying the problem for months, conferring with farm organization leaders and others. The funds proposed would be broken up into $7,000 maximum scholarships to be made to sons and daughters of Illinois rural families who meet preliminary educational requirements. The money would be returned to the fund by the beneficiary within a reasonable time after he is in practice, to be reused for another similar scholarship. The candidate would have to pass the admitting board of the University of Illinois College of Medicine, Chicago, as would any other intending medical student. The final condition would be the candidate's willingness to agree to practice in rural Illinois, at least until his scholarship is repaid. For purposes of the plan, rural Illinois is defined as including communities of fewer than 10,000 population.

KENTUCKY

Cancer Detection Clinics.—In cooperation with the Kentucky Division of the American Cancer Society the state health department has set up sixteen cancer detection and treatment clinics throughout the state at Ashland, King's Daughters' Hospital; Bowling Green, City Hospital; Covington, William Booth Memorial Hospital; Glasgow, T. J. Samson Community Hospital; Greenville, Muhlenberg Community Hospital; Henderson, Henderson Hospital; Hopkinsville, Jennie Stuart Memorial Hospital; Lexington, Good Samaritan Hospital; Louisville, St. Joseph Infirmary, Norton Memorial Infirmary, Red Cross Hospital and Louisville General Hospital; Middleboro, Middleboro Hospital; Owensboro, Owensboro-Daviess County Hospital; Paducah, Riverside Hospital, and Pikeville, Methodist Hospital. Physicians and county health officers refer cases of suspected cancer to these clinics, where x-ray, radium and surgery are available.

MARYLAND

Dr. Harkins to Go to Seattle.—Johns Hopkins University announces the resignation of Dr. Henry N. Harkins, associate professor of surgery, Johns Hopkins University School of Medicine and Johns Hopkins Hospital, effective as of July 1. Dr. Harkins has been appointed professor of surgery and executive officer of the department of surgery at the new medical school of the University of Washington, Seattle.

Health Officer to Retire.—The Washington *Post* reports that Dr. Elmer C. Kefauver, for twenty years health officer of Frederick County and also of the city of Frederick, plans to retire July 1 and that Dr. Donald J. Roop, New Market, who was recently appointed assistant county health officer, will succeed Dr. Kefauver when he retires. Dr. Roop is a graduate of the University of Maryland School of Medicine and served in the army during the recent war.

MASSACHUSETTS

License Revoked.—The Board of Registration in Medicine voted January 10 to suspend the license to practice medicine in the Commonwealth of Massachusetts of Dr. Marguerite F. Krausz, 8 Winter Street, Boston, for three months because of gross misconduct in the practice of her profession.

Tuesday Evening Lectures.—The Council of the House Officers' Association of Boston City Hospital is sponsoring a Tuesday evening lecture series in the new Cheever Amphitheater in the Dowling Building at 7 o'clock. The next two lectures are on March 25 and April 8. The March 25 lecture will be given by Dr. Cornelius P. Rhoads, director of the Memorial Hospital for the Treatment of Cancer and Allied Diseases, New York, on "Metabolic Aspects of Cancer," and will be discussed by Dr. Ira T. Nathanson of the Massachusetts General Hospital, Boston; the April 8 lecture by Dr. Wilder J. Penfield, Montreal, director of the Montreal Neurological Institute, on "Classification and Differential Diagnosis of the Epilepsies," will be discussed by Dr. William G. Lennox, Harvard Medical School, Boston, and the staffs of Children's and Boston City hospitals.

MICHIGAN

Industrial Meeting.—The Michigan Association of Industrial Physicians and Surgeons will hold its annual meeting in Detroit March 11 at the Shelby Hotel beginning at 10:30 a. m. Graduate and undergraduate educational opportunities in industrial medicine and recent advances in surgery and medicine will be the subjects of the program.

Personal.—Dr. William J. Jend, Detroit, was recently honored by the Detroit Police Department for driving an automobile forty-two years without a major traffic ticket for a distance just short of a million miles.——Dr. Kenneth B. Babcock has been named director of Grace Hospital, Detroit, succeeding the late Dr. John H. Law.

A Teaching Opportunity.—The Branch County Health Center and its staff have started a cooperative plan with the University of Michigan hospital under which the department of pediatrics at University Hospital will send a resident physician specializing in pediatrics to the health center. The plan calls for a rotation of the senior residents of the University Hospital every three months. The program has been designed as a teaching opportunity for both young specialists and the physicians of the county. The idea was initiated by the University of Michigan and the department of pediatrics in conjunction with Dr. Charles F. Wilkinson of the Kellogg Foundation, the coordinator at University Hospital for postgraduate training of Michigan physicians.

MISSOURI

Personal.—Dr. Richard A. Sutter, who was recently elected president of the St. Louis County Medical Society, is said to be the youngest president ever elected by that 44 year old organization. Dr. Sutter, 37, the son of the late Dr. John H. Sutter, who was president of the society in 1932, is a veteran of World War II.

University News.—A department of electroencephalographic technology will be established next fall at Washington University School of Medicine, St. Louis. The eight month course will begin October 1. Instruction will be given by Dr. James O'Leary, professor of neurology; George H. Bishop, Ph.D., professor of biophysics, and Dr. William H. Fields, assistant in neuropsychiatry.

NEW JERSEY

Hospital News.—In recognition of the forty years of distinguished service Dr. Berthold S. Pollak, Jersey City, N. J., rendered as medical director of the Hudson County Tuberculosis Hospital, the county's board of chosen freeholders has changed the name of the hospital to the Berthold S. Pollak Hospital for Chest Diseases.——An anonymous gift of $100,000 to Monmouth Memorial Hospital, Long Branch, toward construction and equipment of a surgical floor in honor of Dr. Harry B. Slocum, chief of staff, was announced February 13.

Dr. Allman Appointed to State Board.—Dr. David B. Allman, senior attending surgical chief at Atlantic City Hospital, has been appointed by the governor to the New Jersey State Board of Medical Examiners to succeed the late Dr. Samuel Barbash. Dr. Allman is on the staff of the Betty Bacharach Home for Afflicted Children, Longport; Atlantic County Hospital for Mental Diseases, and Atlantic County Hospital for Tuberculous Diseases, Northfield. He also is general chairman of the Local Committee on Arrangements of the Centennial meeting of the American Medical Association to be held in Atlantic City June 9-13.

NEW YORK

Narcotic Violation.—Dr. Frank E. Kellner, 214 West Court Street, Rome, pleaded guilty in the U. S. District Court in Albany to violation of the Federal Narcotic Law and on Dec. 10, 1946 was fined $2,000 and placed on probation for a period of two years.

Tuberculosis Conference.—The annual conference of the New York Tuberculosis and Health Association will be held Thursday, March 20, at the Pennsylvania Hotel, New York City. During the morning the Tuberculosis Sanatorium Conference of Metropolitan New York will present papers on the case finding program in New Jersey and on state legislation on tuberculosis as it affects New York City. A session on social hygiene will begin in the morning and run throughout the day. One session will discuss information services from the point of view of the community, the individual and the association. Another session, at 3 p. m., will be on health education. Dr. Harry S. Mustard, director, Columbia University School of Public Health, New York City, will speak at luncheon on "Toward a Better Public Health."

New York City

Change Name of Hospital.—The board of managers for the Home for Incurables, New York City, has authorized a change in name of the building, which hereafter will be designated "St. Barnabas Hospital for Chronic Diseases." However, the former corporate title will be retained for legal and fund raising purposes. Incorporated in 1866, it began as a small frame rented house with 33 patients cared for during the first year, to become a modern hospital for chronic illness with 455 beds and the Braker Memorial Home for old people.

Health Council of Greater New York.—An organization made up of twenty-nine official and voluntary agencies, known as the Health Council of Greater New York, has opened offices at 137 Centre Street, Manhattan. Dr. I. Ogden Woodruff, its president, said that the purpose of the organization is to enlist more public support for an enlarged public health program. The new council will be able to carry on research and study on a level impossible for individual organizations because of the cost. Among the agencies in the council are the North Shore and Central Queens Red Cross Chapters and the Catholic Charities of the Diocese of Brooklyn. Other agencies will be added as the work progresses. Dr. Woodruff is a member of the public health relations committee of the New York Academy of Medicine, professor emeritus of clinical medicine at Columbia University and a member of the staff of Bellevue Hospital.

NORTH CAROLINA

Gifts to Bowman Gray School.—Announcement was made January 2 of the establishment of a $1,700,000 endowment fund by Mr. James A. Gray, Winston-Salem, the income of which will go to eleven North Carolina colleges. The principal beneficiary of the endowment fund is the Bowman Gray School of Medicine of Wake Forest College, Winston-Salem, which was awarded $900,000 of the amount. On December 29 Dr. Coy C. Carpenter, dean of Bowman Gray School of Medicine at Wake Forest College, announced the gift of $60,000 from Mrs. Nathalie Gray Barnard for further support of the development of the department of psychiatry.

PENNSYLVANIA

Allergy Forum at Reading.—The Central Pennsylvania Allergy Association will hold its spring forum in Reading, March 26, at the Berkshire Hotel. The speakers are Dr. Bela Schick, lecturer, diseases of children, Columbia University, New York, "The Allergic Child and the General Practitioner"; Dr. Harold A. Abramson, assistant professor of physiology, Columbia University, "The Present Status of Allergy"; Dr. Harold L. Strause, associate in otolaryngology, St. Joseph Hospital, Reading, "Ocular Allergy"; Dr. Carroll S. Wright, professor of dermatology and syphilology, Temple University School of Medicine, Philadelphia, "Treatment of Various Allergic Dermatoses"; Dr. Harrison F. Flippin, associate in medicine, University of Pennsylvania School of Medicine, "What Price Sulfonamide and Antibiotic Therapy?" and Dr. Ralph M. Mulligan, chief of departments of allergy, St. Joseph and Community General Hospitals, Reading, "Thirty Questions and the Allergist." At a session in the morning at St. Joseph Hospital Dr. Stephen D. Lockey, Lancaster, president of the organization, will discuss the use of recent drugs in allergy and Dr. Arthur C. Kalisch, York, dust therapy. A dinner will follow in the evening. The fall meeting will be held at Harrisburg.

Philadelphia

Postgraduate Institute.—The eleventh annual postgraduate institute of the Philadelphia County Medical Society will be held at the Bellevue-Stratford Hotel, Philadelphia, April 15-18. Among the subjects to be discussed are thyroid problems, diabetes, vitamins, hormones, intestinal disorders, pathologic states of the kidney, peripheral vascular disease, antibiotics, hypertension, diseases of the lungs, neuropsychiatry, stomach and duodenum, allergy, skin disorders and otolaryngologic diseases. Two evening meetings on the subject of childhood and infancy disorders and obstetric and gynecologic problems will be held in the society's building. For further information write Dr. Gilson C. Engel, director, 301 South 21st Street, Philadelphia 3.

Temple University Appointments.—Dr. J. Robert Willson, Chicago, has been appointed head of the department of obstetrics and gynecology at Temple University School of Medicine and Hospital. A graduate of the University of Michigan School of Medicine, Dr. Willson continued on the staff of the University of Michigan until 1938, when he was appointed assistant professor of obstetrics and gynecology at the University of Chicago and Chicago Lying-In Hospital. His research work has been in toxemia of pregnancy and carcinoma. Dr. Valy Menkin has been appointed associate professor of experimental pathology in the medical department. Dr. Menkin graduated from Harvard Medical School, Boston, in 1922 and since that time has done research in experimental pathology in Harvard Medical School and in Duke University, Durham, N. C.

WASHINGTON

Voluntary Blood Donor Service.—Benton-Franklin Counties Red Cross, with the aid of local physicians, has established a voluntary blood donor service. The donors are given a physical examination and blood Kahn, Rh factor and hemoglobin tests and their blood is typed. A list is kept at Red Cross headquarters and at Our Lady of Lourdes Hospital, Pasco, so that blood donors are now available for the area twenty-four hours a day.

Postgraduate Course in General Surgery. — A postgraduate course in general surgery including orthopedics, neurology, bacteriology, obstetrics and gynecology, sponsored by the Washington State Medical Association, will be offered at King County Hospital, Seattle, March 3-29, to members of medical associations in Washington, Idaho, Montana, Oregon and British Columbia. For further information address Dr. John K. Martin, Washington State Medical Association, 327 Cobb Building, Seattle.

ALASKA

Survey of Alaskan Clams.—The territorial department of health in cooperation with other services and boards is conducting a survey to determine the prevalence of Gonyaulax catanella in the clams found in southeastern Alaskan waters. Gonyaulax toxin causes paralytic poisoning in man and the Federal Food and Drug Administration does not permit the sale in the United States of shellfish which show even a minimum amount of the toxin. Surveys will attempt to determine during what parts of the year the toxin is present in clams and in what areas the poisonous shellfish are found. It is hoped both to benefit the residents of southern Alaska economically and to assure the public at what periods of the year such clams can be eaten.

PUERTO RICO

Pharmacists Honor Dr. Moulton.—George A. Moulton, Pharm. D., Peterborough, N. H., president of the American Pharmaceutical Association and past president of the National Association of Boards of Pharmacy, has been made an honorary life member of the *Puerto Rico Pharmaceutical Association*, in recognition of his services to pharmacy on the island.

Director of Hospital Facilities Division.—The U. S. Public Health Service has announced the appointment of Dr. Eduardo Garrido Morales, Philadelphia, former health commissioner of Puerto Rico, to act as local director for the Hospital Facilities Division, U. S. Public Health Service, and to act also as consultant to antivenereal and antituberculosis programs that are being conducted in the island with federal and insular funds. Puerto Rico is entitled to an annual appropriation of $2,500,000 for these programs.

Public Health Association.—The sixth annual meeting of the Puerto Rico Public Health Association was held February 5-8 at the School of Tropical Medicine in San Juan, under the chairmanship of Dr. Angel M. Marchand, assistant commissioner of health, to discuss sanitary and public health problems. American physicians and engineers who attended as guests of the association were John M. Henderson, professor of sanitary engineering sciences, Columbia University, New York; John M. Hepler, engineering department, Michigan State Department of Health; Miss Pearl McIver, Nurses Office, U. S. Public Health Service; Dr. Elmer L. Sevringhaus, director of clinical research, Hoffman-LaRoche, Inc.; Brig. Gen. James S. Simmons, Harvard University School of Public Health; James H. Steele, D.V.M., consultant on Veterinary Medicine, U. S. Public Health Service, Washington, D. C.; William A. Sodeman, Tulane University of Louisiana School of Medicine, New Orleans; Dr. Francis J. Weber, Lansing, Mich., and Alfred J. Aselmeyer, U. S. Public Health Service, Washington, D. C.

GENERAL

Philip Levine Receives Award.—Dr. Philip Levine, one of three men credited with the discovery of the Rh factor in blood and director of the Ortho Research Foundation, Linden, N. J., received the annual scientific award of Phi Lambda, Kappa, national medical fraternity, January 1 at a dinner meeting of the society in the Hotel Biltmore, New York City.

National Negro Health Week.—The week of March 30-April 6 has been designated by the U. S. Public Health Service as National Negro Health Week. The special objective will be "communitywide cooperation for better health and sanitation." A health week schedule beginning with Sunday, Mobilization day, continues as Home Health day, Community Sanitation day, Adults' Health day, School Health and Safety day, General Clean-up day and Report and Follow-up day.

Special Society Meetings in St. Louis.—The meetings of the American Laryngological, Rhinological and Otological Society, Inc., will be held in St. Louis during the week of April 21. The American Board of Otolaryngology will meet April 12-20 at the Hotel Coronado; the American Otological Society, Inc., April 21-22; the American Laryngological Association April 23-24, and the Triological Society April 25-26, all at the Hotel Statler, St. Louis.

American College of Chest Physicians.—The thirteenth annual meeting of the American College of Chest Physicians will be held at the Ambassador Hotel, Atlantic City, N. J., June 5-8. A scientific program has been planned with prominent speakers from other countries. The examinations for fellowship will be held on June 5. Applicants for fellowship in the college who plan to take these examinations should communicate at once with the executive secretary, American College of Chest Physicians, 500 North Dearborn Street, Chicago 10.

Training in Nutrition.—The Robert Gould Research Foundation of Erlanger, Ky., has established for 1947-1948 two grants of $1,500 each for training young people in nutrition and ten grants-in-aid of research. These grants-in-aid are of $2,000 each and will be distributed equally in the following fields: (1) recognition of preclinical nutritional deficiencies; (2) human nutritive requirements; (3) the most effective technics for educating the public in nutrition; (4) improvement in the nutritive value of human food as grown; (5) improvement in the nutritive value of animal food.

Special Society Elections.—At the recent annual meeting of the Society of American Medical Colleges, Dr. Walter A. Bloedorn, dean of the George Washington University School of Medicine, Washington,, D. C., was named president-elect; Dr. Maxwell E. Lapham, dean of Tulane University of Louisiana School of Medicine, New Orleans, vice president; Dr. Fred C. Zapffe, Oak Park, Ill., secretary, and Dr. Arthur C. Bachmeyer, Chicago, treasurer.——At the annual meeting of the American College of Surgeons in Cleveland late in December Dr. Arthur W. Allen, Boston, was elected president.

Southeastern Surgical Congress.—The assembly of the Southeastern Surgical Congress will be held at the Brown Hotel, Louisville, Ky., March 10-12 under the presidency of Dr. Elmer L. Henderson, Louisville. A number of doctors from medical centers throughout the country and Canada will address the session. Among the subjects to be discussed are "Segmental Pulmonary Resection in Bronchiectasis," "Surgical Treatment of Peptic Ulcer," "Surgical Treatment of Hypertension," "Thrombin and Its Clinical Applications," "Etiology and Treatment of Vesicovaginal Fistula," "Carcinoma of the Breast," "Analysis of 1,100 Consecutive Thyroidectomies," "Obligations and Opportunities of the Industrial Surgeon" and "Carcinoma of the Lung: Diagnosis and Treatment."

National Council on Rehabilitation.—The annual meeting of the National Council on Rehabilitation, scheduled for April 29 and 30, has been planned in cooperation with the National Rehabilitation Association, whose annual meeting will follow immediately on May 1-3. Both meetings will be held in the Jefferson Hotel, St. Louis. Complementary programs will be presented by the two organizations. The council will offer papers on tuberculosis, heart disease and mental diseases; the association will cover the blind, deaf, cerebral palsied and epileptic. The council will discuss the evaluation of physical and mental disabilities, while the association will outline specific tools used in the rehabilitation process: counseling, tests and measurements, consideration of personality factors and selective placement, with an explanation of the importance of matching physical capacities appraisal with physical demands analysis. The association will give a detailed picture of such facilities as homebound workshops, rehabilitation centers and instructional programs. The speakers will include leading specialists in the fields of medicine, surgery and psychiatry.

Northern Tri-State Medical Association.—The seventy-fourth annual meeting of this organization, which includes Indiana, Ohio and Michigan, will be held April 8 in the Rackham Memorial Educational Building, Detroit. Among the speakers will be Dr. Winfred B. Harm, president, Wayne County Medical Society; Dr. William M. Tuttle, Detroit, Recent Advances in Thoracic Surgery; Dr. Jerome W. Conn, associate professor of internal medicine, University of Michigan Medical School, Ann Arbor, Treatment of Diabetes; Dr. Sprague H. Gardiner, Indianapolis, Management of the Menopause; Dr. William Magner, director department of pathology, St. Michael's Hospital, Toronto, Enigmatic Anemias; Dr. George F. Lull, Secretary, American Medical Association, Chicago; Dr. Frederick A. Coller, professor of surgery and chairman of the department, University of Michigan Medical School, Ann Arbor, Surgical Aspects of the Abdominal Wall; Laurence H. Snyder, Sc.D., professor of medicine (genetics) and zoology, Ohio State University, Columbus, Medical Genetics and Public Health, and Dr. Edward D. Spalding, professor of clinical medicine, Wayne University College of Medicine, Detroit, Recent Advances in Cardiology.

Hodgkin's Disease Research Foundation.—The formation of a nonprofit organization, the Hodgkin's Disease Research Foundation, Inc., has been announced. Its purposes are (1) the coordination of research in all aspects of Hodgkin's disease, (2) stimulation of scientific and public interest in the problems presented by the work of this foundation, (3) assistance in the dissemination of knowledge regarding the nature, cause and treatment of Hodgkin's disease, (4) exchange of views among persons or organizations engaged in research related to the objectives of this foundation, (5) procuring of assistance from persons best able to conduct research in the etiology and treatment of Hodgkin's disease, (6) education of the public in preventive measures which may develop from this study and (7) the raising of funds to further the aims of this foundation. The officers are Drs. Robert Chambers, chairman of the board, research professor of biology, New York University, New York; Herman A. Hoster, president, associate director of cancer research, Ohio State University College of Medicine, Columbus; Antonio Rottino, first vice president, pathologist, St. Vincent's Hospital, New York; Harry A. Rolnick, secretary-treasurer, Philadelphia, and Mr. John F. X. Finn, second vice president, associate professor of jurisprudence, Fordham University. The executive offices of the foundation have been established at St. Vincent's Hospital, Seventh Avenue and Eleventh Street, New York 11.

The 1946 Poliomyelitis Epidemic.—The National Foundation of Infantile Paralysis has published the list of states showing in order the incidence of poliomyelitis cases from Jan. 1 through Dec. 28, 1946.

Rank		Cases	Rank		Cases
1	Minnesota	2,832	26	New Jersey	260
2	Illinois	2,550	27	Tennessee	183
3	California	2,132	28	Georgia	171
4	New York	1,462	29	New Mexico	168
5	Missouri	1,270	30	New Hampshire	164
6	Wisconsin	1,255	31	Oregon	160
7	Michigan	1,063	32	North Carolina	153
8	Kansas	1,060	33	Utah	145
9	Texas	981	34	Virginia	144
10	Colorado	916	35	Montana	128
11	Ohio	717	36	Connecticut	126
12	Nebraska	640	37	Wyomnig	122
13	Iowa	637	38	Maryland	117
14	Florida	577	39	Arizona	114
15	Washington	528	40	Kentucky	110
16	North Dakota	490	41	Rhode Island	92
17	Indiana	437	42	West Virginia	76
18	Oklahoma	404	43	Vermont	73
19	Arkansas	402	44	Idaho	52
20	South Dakota	390	45	Maine	42
21	Massachusetts	385	46	Delaware	32
22	Louisiana	384	47	District of Columbia	32
23	Mississippi	332	48	South Carolina	21
24	Alabama	303	49	Nevada	5
25	Pennsylvania	287			

Decline in Mortality from Syphilis.—The statistical bulletin of the Metropolitan Life Insurance Company for December reports that mortality from syphilis and related conditions has been declining almost continuously since World War I. From a maximum of 19.1 per hundred thousand policyholders in 1917, the age adjusted death rate declined to 5.1 in 1945. Mortality from syphilis not only continued its downward trend during the war but actually accelerated its decline during the period. The long term decline in death rate from syphilis represents especially the experience among white persons, but in the last decade substantial progress in reducing the mortality among Negroes has been made. The adjusted relative declines in general are found in early and middle adult life. The bulletin credits the intensive nationwide campaign in the past decade for the decline, increased funds from federal, state and local governments and the growth of legislation requiring complete tests for those contemplating marriage and for expectant mothers. Since 1937 the number of states requiring premarital tests for syphilis from both bride and groom increased from four to thirty-two. Thirty-five states now require antepartum tests for pregnant women. The bulletin also credits the control measures put into effect by military health officials in connection with civilian health authorities, discovery and treatment of very large numbers of cases brought to light through selective service examinations and the available new therapy.

Campaign for Trained Occupational Therapists.—The American Occupational Therapy Association is distributing "Occupational Therapy, A Pioneering Profession" to doctors, educators, public health officials, rehabilitation agencies, vocational counselors and others in a campaign to increase the ranks of trained occupational therapists. This drive spearheads the thirtieth anniversary of the American Occupational Therapy Association, which has worked to establish standards of training and qualification by engaging in research and spreading information concerning the use of occupational therapy as an adjunct of medicine. Registered occupational therapists now number 2,200, which is far short of the nation's demand for trained personnel. The rehabilitation program of the Veterans Administration alone calls for 1,300 by the spring of 1947. Milestones in the development of occupational therapy include the establishment in 1930 of a National Register of Qualified Occupational Therapists, published annually and designed to protect the standards of the profession, and the issuance in 1935 of "Essentials of an Accredited School of Occupational Therapy," set up by the Council on Medical Education and Hospitals of the American Medical Association. As a result of the latter, training centers for occupational therapy have grown from five independent schools in 1935 to twenty-five schools which now train students in medical information and a wide variety of arts and skills, leading to a diploma or certificate. Last month the new official publication of the American Occupational Therapy Association, the *American Journal of Occupational Therapy*, made its debut with six issues scheduled per year and subscriptions available to laymen as well as to professionals.

FOREIGN

Dr. Stoll Honored.—Dr. Arthur Stoll, Basle, Switzerland, internationally known authority in pharmaceutical chemistry, has been honored with the publication of a special anniversary issue of the *Swiss Medical Journal*.

Medical Aid to China.—The American Bureau for Medical Aid to China, New York, has taken steps this year to improve China's medical and public health facilities, Dr. J. Heng Liu, medical director of the bureau, announced January 3. The first is the establishment of the first penicillin plant in China at Peiping. Dr. Liu explained that penicillin is so scarce in China that its use is prohibited for treatment of venereal disease. The second step is a three year program to aid six Chinese medical colleges. Fifteen to twenty fellowship grants for visiting professors from the United States are included in the program.

Requirements for Presentation of Smallpox Vaccination Certificates.—The Secretary of State as of February 3 informed the Federal Security Administrator that the Republic of the Philippines has modified its requirements concerning the presentation of certificates of smallpox vaccination. According to present requirements, officers, crew members and passengers of all vessels clearing from United States ports for the Philippines are required to present satisfactory certificate of recent smallpox vaccination. "Satisfactory certificate of vaccination" means evidence of successful vaccination or evidence of immune reaction not more than one year prior to the actual date of presentation. Certificates issued by the United States Public Health Service, medical officers of the United States armed forces and other government agencies will be honored. Certificates issued by private physicians will be honored if written on professional stationery duly signed.

British Health and Tuberculosis Conference.—A conference on tuberculosis, arranged by the National Association for the Prevention of Tuberculosis of Great Britain, will be held in London from July 8 to 10 inclusive. Aneurin Bevan, M.P., minister of health, will speak on the subject of "Tuberculosis and the National Health Service Act." The sessions will include discussions on tuberculosis in the British commonwealth and the Colonial tuberculosis services; sanatorium design; after-care and rehabilitation; the psychology of tuberculosis; new discoveries in the prevention and treatment of the disease, and the National Health Service and its effect on tuberculosis schemes. Plans are being made for overseas guests to visit sanatoriums, hospitals and clinics and demonstrations of various kinds. The conference is open to both doctors and laymen. Further particulars can be obtained from the Secretary General, National Association for the Prevention of Tuberculosis, Tavistock House North, Tavistock Square, London, W. C. 1.

Marriages

Robert Matthews Leitch, Battle Creek, Mich., to Miss Lillian Badger of London, England, in Niagara Falls, N. Y., in November.

Wilks O. Hiatt Jr., Savannah, Ga., to Mrs. Harry Ripley Melton Jr. of St. Petersburg, Fla., September 23.

Edward F. Kelly, West Los Angeles, Calif., to Miss Evelyn Husby of Mount Vernon, Wash., November 3.

Stanley Eugene Huff, Bremen, Ind., to Miss Helen Barbara Leonard of St. Paul October 30.

Morris L. Friedman to Miss Jeanette Birenboim, both of Kansas City, Mo., October 20.

Peter D. Corsones, Rutland, Vt., to Miss Evelyn Larios of Kingston, N. Y., in September.

Thomas Manley, Tacoma, Wash., to Miss Virginia Draper of Yakima August 19.

Deaths

Raymond Sanderson, Jacksonville, Fla.; born in Scranton, Pa., Aug. 20, 1883; Johns Hopkins University School of Medicine, Baltimore, 1910; member of the American Medical Association and the Southern Medical Association; served as director of the Ontario, N. Y., Laboratory; organizer and director of the Ulster County, N. Y., Laboratory and director of the Vassar Hospital Laboratory in Poughkeepsie, N. Y.; during World War I served as chief of laboratory services at the base hospital in Camp Merritt, N. J., and in other camps; a leader in organizing the Jacksonville Reserve Officers Association and later served as its president; graduate of the U. S. School of Aviation Medicine at Brooks Field, Texas; in July 1930 commissioned as a flight surgeon with the rank of lieutenant colonel in the U. S. Army Reserve; at the outbreak of World War II was recalled to active duty as a colonel; placed on an inactive status by reason of his health; senior medical examiner for the Civil Aeronautics Administration in the state of Florida; died Dec. 10, 1946, aged 63, of arteriosclerosis.

Charles Edward Remy, Chicago; University of Nebraska College of Medicine, Omaha, 1910; fellow of the American Psychiatric Association; member of the American Hospital Association; charter fellow of the American College of Hospital Administrators; served as a lieutenant colonel in the medical reserve corps of the U. S. Army during World War I; at one time associated with the U. S. Public Health Service Reserve; formerly assistant director of the Michael Reese Hospital and superintendent of the Maxwell Street Dispensary; formerly assistant superintendent and clinical director of the Yankton State (S. D.) Hospital, superintendent of the Knickerbocker Hospital in New York and the Minneapolis General Hospital; died in the Wesley Memorial Hospital Dec. 16, 1946, aged 65, of coronary thrombosis.

John Albertson Sampson ⊕ Albany, N. Y.; Johns Hopkins University School of Medicine, Baltimore, 1899; instructor in gynecology at his alma mater from 1903 to 1905, clinical professor of gynecology from 1905 to 1911 and professor from 1911 to 1942, when he became professor emeritus of gynecology; past president of the American Gynecological Society; fellow of the American College of Surgeons; received the honorary master of science degree from Williams College, Union College and Rensselaer Polytechnic Institute; consulting gynecologist, Brady Maternity Hospital; for many years senior gynecologist at the Albany Hospital, where he died Dec. 23, 1946, aged 73, of cerebral thrombosis and left hemiplegia.

James Henry Randolph ⊕ Jacksonville, Fla.; Johns Hopkins University School of Medicine, Baltimore, 1904; at one time physician in charge at the State Hospital in Chattahoochee; served as head of the neurologic department of the old St. Vincent's Hospital from its inception; a member of the staff and at one time head of the department of neurology at St. Luke's Hospital; consultant in neurology at the Riverside Hospital; veteran of the Spanish-American War; for two years during World War II served as examining psychiatrist at Camp Blanding, Fla.; physician in charge of Dr. Randolph's Sanitarium; died Dec. 25, 1946, aged 70.

Carl Rossow Steinke ⊕ Akron, Ohio; University of Pennsylvania School of Medicine, Philadelphia, 1909; fellow of the American College of Surgeons; member of the American Association for Thoracic Surgery; member of the founders group of the American Board of Surgery; member of the House of Delegates of the American Medical Association in 1935 and from 1937 to 1945; at one time a fellow in surgery at the Mayo Clinic in Rochester, Minn.; served during World War I; on the staffs of the City Hospital, Edwin Shaw Sanatorium and St. Thomas and Children's hospitals; died Dec. 14, 1946, aged 63.

Frank Church O'Neil ⊕ Middletown, Ohio; Harvard Medical School, Boston, 1934; diplomate of the National Board of Medical Examiners; specialist certified by the American Board of Pediatrics; interned at the Long Island College Hospital in Brooklyn; served a residency at the Children's Hospital in Boston, Cincinnati General Hospital and the Children's Hospital in Cincinnati; on the staff of the Middletown Hospital, where he died Dec. 31, 1946, aged 39.

Joseph Corrigan Jr., ⊕ Conroe, Texas; Louisiana State University Medical Center, New Orleans, 1937; on the staff of the Montgomery County Hospital; died Oct. 28, 1946, aged 33, in an airplane accident.

James E. Douglass, Winnsboro, S. C.; Medical College of the State of South Carolina, Charleston, 1885; served on the exemption board during World War I; died Dec. 15, 1946, aged 82, of a hip fracture received in a fall and uremia.

Frank Ganes Dye, Skaneateles, N. Y.; University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore, 1919; member of the American Medical Association; at one time health officer; served in the medical corps of the U. S. Naval Reserve during World War II; formerly on the staff of the City Hospital in Auburn and member of the board of managers of the Onondaga (N. Y.) County Sanatorium; died in the Crouse-Irving Hospital in Syracuse January 5, aged 54, of cerebral hemorrhage.

Daniel Alverson Eiseline ⊕ Shortsville, N. Y.; University of Buffalo School of Medicine, 1896; formerly county coroner; served during World War I; lieutenant colonel, medical reserve corps, not on active duty; member of the board of directors of Shortsville State Bank; on the staffs of the Thompson Memorial Hospital in Canandaigua and the Clifton Springs (N. Y.) Sanitarium and Clinic, where he died Dec. 27, 1946, aged 77, of carcinoma of the sigmoid.

Edwin Franklin Eshleman, Palmerton, Pa.; Jefferson Medical College of Philadelphia, 1893; member of the American Medical Association; died in the Palmerton Hospital Nov. 22, 1946, aged 81, of coronary occlusion.

De Koven Alexander French, Muskogee, Okla.; Howard University College of Medicine, Washington, D. C., 1928; died Nov. 29, 1946, aged 44, in an automobile accident.

Louis Henry Hempelmann ⊕ St. Louis; Washington University School of Medicine, St. Louis, 1896; assistant professor emeritus of clinical medicine at his alma mater; specialist certified by the American Board of Internal Medicine; member of the staffs of the Evangelical Deaconess Home and Hospital, Barnes Hospital and the Missouri Baptist Hospital; died Dec. 27, 1946, aged 73, of coronary occlusion.

Eugene Michel Holder ⊕ Memphis, Tenn.; Memphis (Tenn.) Hospital Medical College, 1894; professor of surgery at the University of Tennessee College of Medicine; fellow of the American College of Surgeons; on the staffs of the John Gaston Hospital and the Baptist Memorial Hospital, where he died Dec. 16, 1946, aged 77, of diaphragmatic hernia with gangrene and perforation of the stomach.

Nicholas Kalinowski, Chicago; Chicago College of Medicine and Surgery, 1914; served on the staff of St. Mary's Hospital; died Dec. 18, 1946, aged 61, of heart disease.

Johannes Jacobus Miller ⊕ Ackley, Iowa; Northwestern University Medical School, Chicago, 1899; local officer on the state board of health; local surgeon for the Illinois Central Railroad; on the staff of the Municipal Hospital in Iowa Falls; owner of the Miller Hospital; died Nov. 27, 1946, aged 71, of pulmonary edema and coronary arteriosclerosis.

Walter Marion Miller, Bala-Cynwyd, Pa.; Jefferson Medical College, Philadelphia, 1903; formerly affiliated with the medical division of the board of education of Philadelphia; died in Palm Beach, Fla., Dec. 29, 1946, aged 67, of coronary thrombosis.

Henry McKee Minton ⊕ Philadelphia; Jefferson Medical College of Philadelphia, 1906; served on the staff of the Mercy Hospital; died Dec. 29, 1946, aged 75, of heart disease.

Nathaniel Taylor Moore, Las Vegas, N. M.; University of Nashville (Tenn.) Medical Department, 1898; at one time secretary of the El Paso County (Texas) Medical Society; member of the American Medical Association; served during World War I; formerly affiliated with the New Mexico State Hospital; died in St. Anthony's Hospital Nov. 17, 1946, aged 79, of carcinoma of the larynx.

Frederick Scoville Nicoll ⊕ Berlin, Md.; Cornell University Medical College, New York, 1935; on the staff of the Peninsula General Hospital in Salisbury; president of the Eastern Shore Baseball League; died in the Abington Memorial Hospital, Abington, Pa., Dec. 30, 1946, aged 40, of carcinoma of the stomach.

Daniel Vincent O'Leary, Albany, N. Y.; Albany Medical College, 1904; member of the American Medical Association; served as city health commissioner; on the staffs of the Anthony N. Brady Maternity Home and St. Peter's Hospital, where he died Dec. 23, 1946, aged 67, of diabetes mellitus.

Ralph Wallace Reed ⊕ Cincinnati; Pulte Medical College, Homeopathic, Cincinnati, 1902; formerly professor of mental and nervous diseases at the Eclectic Medical College; served during World War I; died in the Bethesda Hospital Dec. 23, 1946, aged 66, of acute leukemia.

Walter Schilling ⊕ San Francisco; Harvard Medical School, Boston, 1925; assistant clinical professor of medicine at the Stanford University School of Medicine; member of the American Psychiatric Association; affiliated with the Stanford University Hospital; died Dec. 16, 1946, aged 54, of coronary disease.

Elmer Walfred Seaburg, Peoria, Ill.; Chicago College of Medicine and Surgery, 1917; member of the American Medical Association; served during World War I; affiliated with the Methodist Hospital; died in the Veterans Administration Hospital in Danville, Nov. 9, 1946, aged 54.

William Stacy Siler Jr., ⊕ Shreveport, La.; Tulane University of Louisiana School of Medicine, New Orleans, 1934; interned at Shreveport Charity Hospital; died in the Tri-State Hospital Nov. 22, 1946, aged 40.

Wayne Pulley Sirles ⊕ Herrin, Ill.; University of Illinois College of Medicine, Chicago, 1938; specialist certified by the American Board of Otolaryngology; interned at St. Louis City Hospital; served a residency at the Barnes Hospital in St. Louis, where he had been instructor in otolaryngology at the Washington University School of Medicine; served during World War II; on the staff of the Herrin Hospital; died Dec. 11, 1946, aged 34, of coronary occlusion.

Wesley Columbus Slate, ⊕ Spencer, N. C.; University of Tennessee Medical Department, Nashville, 1903; served as chief of staff at Rowan Memorial Hospital in Salisbury, where he died Nov. 7, 1946, aged 65, of heart disease.

Roy Clayton Smisson ⊕ Fort Valley, Ga.; Vanderbilt University School of Medicine, Nashville, Tenn, 1916; chairman of the Peach County Board of Health; member of the board of education of Peach County and Fort Valley, where he had been a trustee of the schools; served overseas during World War I; on the staffs of the Mercy Hospital and the Clinic Hospital in Macon, where he died Dec. 20, 1946, aged 54, of injuries received in an automobile accident.

Fred Alvah Sprague ⊕ Concord, N. H.; Baltimore Medical College, 1906; veteran of the Spanish-American War; served overseas during World War I; at one time a member of the local board of health; died Dec. 3, 1946, aged 73, of cerebral hemorrhage.

Alice Adele Squire, Brooklyn; New York Medical College and Hospital for Women, Homeopathic, New York, 1901; member of the American Medical Association; died in the Peck Memorial Hospital Oct. 4, 1946, aged 69, of obstruction of the jejunum.

Lieut. Alton C. Bookout (MC), U S.N, 1910-1945

Merrill Alpheus Swiney ⊕ Bayonne, N. J.; University of Pennsylvania Department of Medicine, Philadelphia, 1903; medical director and owner of the Swiney Sanatorium, where he died Dec. 7, 1946, aged 74, of cerebral hemorrhage.

Roy Anson Thornley ⊕ Chicago; Georgetown University School of Medicine, Washington, D. C., 1914; member of the American Psychiatric Association; formerly on the faculty of his alma mater; served during World War I; medical consultant for the U. S. Railroad Retirement Board; died Dec. 30, 1946, aged 59.

Byron Burns Thorpe, El Paso, Texas; Central College of Physicians and Surgeons, Indianapolis, 1905; member of the American Medical Association and the New Mexico Medical Society; past president of the Eddy (N. M.) County Medical Society; formerly affiliated with the Artesia Municipal Hospital; died Dec. 17, 1946, aged 66, of heart disease.

Charles Matthew Tierney, Harmony, Minn.; State University of Iowa College of Medicine, Iowa City, 1906; for many years president of the Granger (Minn.) Bank; died Oct. 5, 1946, aged 65, of pulmonary edema, Parkinson's syndrome and carcinomatosis.

Erich Urbach ⊕ Philadelphia; Medizinische Fakultät der Universitat Wien, Vienna, Austria, 1919; associate in dermatology and syphilology at the University of Pennsylvania School of Medicine; member of the board of regents of the American College of Allergists; co-author of "Allergy"; on the staffs of the University of Pennsylvania Hospital and the Jewish Hospital, where he died Dec. 17, 1946, aged 53, of coronary occlusion.

Ralph Emerson Utley ⊕ Harlingen, Texas; Bennett Medical College, Chicago, 1914; on the staff of the Valley Baptist Hospital, where he died Dec. 19, 1946, aged 71, of coronary occlusion.

Adalbert B. Vajda, Milwaukee; Univerzita Komenskeho Fakulta Lékárska, Bratislava, Czechoslovakia, 1920; died in St. Mary's Hospital Dec. 23, 1946, aged 56, of aortic insufficiency and myocarditis.

Victor Ernest Verne ⊕ La Canada, Calif.; University of Minnesota College of Medicine and Surgery, Minneapolis, 1906; served during World War I; died in a hospital at Pasadena Dec. 1, 1946, aged 63.

Benedict Vogt Jr., Gulfport, Fla.; Long Island College Hospital, Brooklyn, 1905; member of the Medical Society of the State of New York and the American Medical Association; served on the staff of the Lutheran Hospital in Brooklyn; died Dec. 23, 1946, aged 62, of chronic heart disease.

John Carroll Walters, Springfield, Ill.; Marion-Sims College of Medicine, St. Louis, 1895; member of the American Medical Association; past president of the Sangamon County Medical Society; died in Miami, Fla, Dec. 29, 1946, aged 74, of cerebral hemorrhage, hypertension and heart disease.

Captain Julian O. Long, M. C., U. S. A., (N. G.), 1908-1944

Richard Shelby Wilson, Milwaukee; Chicago College of Medicine and Surgery, 1914; affiliated with the Veterans Administration Hospital; served during World War I; died Nov. 6, 1946, aged 63, of coronary arteriosclerosis.

Arthur Wolf, Chicago; Friedrich-Wilhelms-Universität Medizinische Fakultat, Berlin, Prussia, 1920; affiliated with the Mount Sinai Hospital; found dead Dec. 17, 1946, aged 61.

KILLED IN ACTION

Alton Coleman Bookout ⊕ Lieutenant, M. C., U. S. Navy, Dallas, Texas; University of Tennessee College of Medicine Memphis, 1938; interned at the California Hospital in Los Angeles; entered the U. S Navy in 1939 as a lieutenant junior grade; medical officer assigned to duty on the U. S. S. *Pillsbury* in the Asiatic area; reported missing in action following the battle of Java the last of February 1942 and officially declared dead by the U. S. Navy Nov. 25, 1945, aged 32.

Julian Oliver Long, Albuquerque, N. M.; Baylor University College of Medicine, Dallas, 1933; interned at the Baylor University Hospital in Dallas; served as health officer of the third district in Albuquerque and the eighth district in Los Lunas; began active duty as a captain in the medical corps of the U. S. Army (National Guard) on Jan 6, 1941; died in the South China Sea Oct. 24, 1944, aged 35, while on board a Japanese prison ship which was sunk.

Foreign Letters

SWEDEN

(From Our Regular Correspondent)

STOCKHOLM, Feb. 14, 1947.

No Visitors Allowed in Stockholm Hospitals

The influenza epidemic in Sweden has reached such proportions that it has been necessary to close all the Stockholm ospitals to visitors. At first only the maternity wards were forbidden territory, but with the ever increasing number of cases f influenza throughout the town it was felt imperative to extend ne regulation to all hospitals for an indefinite period. A chief ontributing reason to this has been the fact that many members f the hospital staffs are themselves down with influenza at a ime when the full personnel is hardly able to keep up with heir work. Keeping visitors away means more time for them o attend to their duties and every minute is needed. Most stablishments with large numbers of workers have been badly it by the epidemic. The Stockholm Municipal Street Car Company, for instance, had almost half of its drivers absent ast week, necessitating warnings that the number of cars in ervice might have to be reduced. Since the cars are now dreadfully overcrowded, long suffering Stockholmers will have ven worse traffic conditions to struggle with. Many companies are now experiencing the highest rates of absence due to illness n the histories of the concerns.

Venereal Disease

The Swedish Medical Board recently requested that it be permitted to do away with some of the secrecy regulations on venereal disease in order to take measures against individuals who are continuing to contaminate others although aware of heir own infection. Physicians are now sworn to secrecy, but he board wishes to have the patients reported to the proper authorities in each region to facilitate follow-ups and legal intervention if necessary. It also requested a law providing that all ndividuals arrested for vagrancy be subjected to examination or venereal disease. It is, of course, the great increase in the number of cases of syphilis that has necessitated these measures. n 1945 about 1,350 new cases of syphilis were reported in Sweden, but only four or five hundred sources of infection were reported and examined. The other sources will remain unknown.

Red Cross Home for Tuberculous Children

The Swedish Red Cross, which has done notable work in eeding the children of Europe, is now planning a home on the Riviera for tuberculous French children. The sum of 200,000 kronor has already been granted by the Help to Europe Foundation to aid in the project. The intention is not to build a new building but to find suitable quarters and refurnish and equip hem. On completion the home will be run by French authorities, with support from the French government.

The Eastman Institute

Much has been written about the Eastman Institute in Stockholm, which provides free dental care to children between the ages of 3 and 15. The institute, incidentally, was made possible by the donation of $1,000,000 to the city of Stockholm by the American industrial magnate George Eastman. It was opened n 1936 and has been doing splendid work since then. But the Eastman Institute, like all other public polyclinics here, suffers from too many patients and too few staff members, the latter fact being due partially to the city salaries, which are too low. It is now necessary to register a child at birth if one expects o get dental attention for it by the age of 3. Mothers are complaining bitterly that just when a child's teeth need attention, at the age of 3, they are told that the waiting list is so long that they must wait at least two years more before being called. Only children with severe toothaches or acute infections are taken out of turn, infections which might not have occurred had the child been examined earlier. There are now 19,000 children waiting for their first treatment, and it is possible to take only a certain percentage of these 3 year olds each year. The institute admits as many as it can but of course can by no means cope with the demand. Should an unregistered child with an infected tooth be accepted for attention he gets that one tooth fixed or extracted with no examination made of any other teeth. Should a registered child be fortunate enough to be attended to he at least gets his other teeth examined while there. However, the situation being what it is, the institute advises parents to take their children to private dentists should they not be called during their third year of age. The increasing nativity rate is not likely to improve conditions.

THE NETHERLANDS

(From Our Regular Correspondent)

AMSTERDAM, Jan. 20, 1947.

Shortage of Doctors

Owing to the interruption of medical education during the war and to the increased needs of the army both in this country and in the East Indies, there is a shortage of medical men. In order to rationalize medical services during this (temporary) setback, legal measures of 1939 are being kept in force by the directorate of public health. Young doctors must send their personal data to the chief inspector of public health and put their services at the disposal of his department for the time being. They may be sent to such urban or mainly rural areas where doctors are missing to take care of their practices for the duration of their being in service. Fitness for military service may result in the incorporation of these young doctors in the army as officers of health.

Income Raised for Admission to Health Insurance

The national health insurance service has raised the level of minimal yearly income which determines admission to insurance to 3,500 guilders. By this act a large section of the people become eligible for health insurance. A considerable shift from private to insurance practice will result from this measure, since the income of the great majority of the families does not exceed this level.

Charles Herbert Best Awarded Honorary Degree

At the beginning of the year the customary public meetings of the senates were held in all Netherlands universities. The Amsterdam University commemorated its 315th anniversary. The Canadian ambassador was present as a representative of Charles Herbert Best, C.B.E., F.R.S., on whom the honorary degree of doctor of medicine was conferred. The pediatrician Professor S. van Creveld presented the degree, pointing out the great service rendered to mankind by the discovery of insulin by the Toronto group of workers.

Professors Retired

On January 1, Professor E. P. Snijders retired from the chair of tropical medicine at the University of Amsterdam. He is a reputed epidemiologist with a long service record in the Far East.

Professor G. van Rijnberk, emeritus physiologist at Amsterdam, has retired also from the post of chief editor of the *Nederlandsch tijdschrift voor geneeskunde.* He had been with this periodical since 1913. Under his editorship the journal was established in its own building and the number of subscribers rose from 3,000 to 7,500, which, in view of the Dutch speaking population of the world, is considerable. The supervising board has appointed Dr. D. Klinkert to be chief editor. It is stated that no major changes are contemplated in the editorial policy.

The Motor Component of Retinal Stimuli

In a dissertation presented to the Faculty of Medicine of Amsterdam, Dr. J. E. Winkelman has discussed the results of his extensive investigations on the motor component of retinal stimuli. The motor action of such stimuli manifests itself in four ways: (1) conjugated turning of both eyes in one direction, (2) opposite movements of the eyes (fusion movements in distance adaptation), (3) perception of a fictitious movement (reiterated bilateral or alternating unilateral visual stimuli) and localization of stimuli in space. In all these modalities of function there is a reflex mechanism whose receptive area is found in the retina. In carefully conducted experiments with suitable or adapted apparatus, slowly alternating haploscopic stimuli were reinvestigated and they were shown to result in the perception of a fictitious movement. With increasing frequency of these stimuli one of two possibilities is substantiated: either simultaneous vision of two separate objects or fusion to one object. Therefore simultaneity or fusion is each a borderline case of the fictitious movement. Whether one or the other of these alternatives occurs depends on the reflex pathway followed. According to Zeeman, who based his views on studies of strabismus, there are three functional possibilities of connecting the perceptions of the retinas: (1) cerebral coordination of the nasal and temporal halves of the retinas, resulting in a reconstruction of the image by way of cerebral proprioceptors, (2) parallel eye movement owing to the functional coordination of homonymous retinal hemispheres and (3) laterally discrepant image representation of noncorresponding retinal points. When simultaneity was observed, the second possibility is assumed as being substantiated, whereas fusion points to the third possibility. The experiments throw light on the question of the circumstances on which the occurrence of these alternatives depends. In a well lighted room haploscopic stimuli tend to produce simultaneity, whereas in a dark room the same type of stimuli would produce fusion. In the lighted room the surrounding objects were decisive for the kind of perception. This now has been put to the test by using in a dark room a peripheral stimulus whose image reached both retinas. A peripheral fusion resulted, and such a fusion proved to be able to inhibit the central fusion. As a result, simultaneity occurred in the dark instead of fusion. Stimulation of noncorresponding peripheral portions of the retinas results in motor impulses that condition turning the bulbs to the side. This is the peripheral fusion reflex. The conflict between peripheral and central fusion tendencies may terminate in the unison of stimuli into stereoscopic depth perception. This conflict between the motor impulses is therefore essential for physiologic depth perception. It was remarkable that even invisible peripheral stimuli (consciously not visible) were able to produce the motor impulses necessary for the conflict with the central fusion. From these observations the author was led to conclude that the site of retinal stimulation rather than any other character of the stimuli is decisive for its motor effect. Peripheral fusion seems to serve spatial orientation; central fusion is useful for other kinds of discrimination in the function of sight. In patients it was observed that the level of the eyes may show definite hyperphoria in the dark yet they were able to look straight in a well lit room. These and persons with strabismus seem to coordinate well their abnormal perceptions, but by haploscopic fictitious movements indications may be found of the degree of abnormality.

Shortage of Soap

A severe shortage of soap threatens the southeastern provinces of the Netherlands with endemic skin diseases, especially scabies. In Limburg, where as a result of heavy fighting in the war housing conditions are still deplorable, 15 per cent of the urban population are said to suffer from scabies.

MOSCOW

(From Our Regular Correspondent)

Dec. 21, 1946.

Increase in the Birth Rate in the Soviet Union

In 1946 as compared with 1940 the mortality of children in Leningrad diminished by 20 per cent and at present it is nearly 50 per cent lower than before the war.

In the town of Tbilisi, Georgia, during nine months of 1946 300 more children were born than in the corresponding period of the previous year. In this connection many new maternity homes and kindergartens were opened. In Riga during the same period 6,000 babies were born, compared with 5,211 babies during last year (there are approximately 22 births per day).

In 1946 about 120,000,000 rubles (about $24,000,000) was spent in Leningrad for mother and child protection, much more than expenditures for the same purpose in the previous year. According to the law relating to mothers of big families, these mothers received in Leningrad for the same period about 12,500,00 rubles (about $2,500,000).

The Third Session of the Academy of Medical Sciences

The third session of the Academy of Medical Sciences of the Union of Soviet Socialist Republics was held late in October 1946 in the Moscow House of Scientists. About 900 members and guests were present; thus it may be said that the session became a conference of the most prominent representatives of Soviet medicine.

The first three days were devoted to one of the basic measures of our health service—confirmation of the academy's five year plan. Its principal aim is to assemble scientific ideas and to determine interrelations between different lines of investigation with the aim of a complex and fruitful elaboration of a series of questions.

The problem of the higher nervous activity is based on the late Academician Ivan Pavlov's studies on conditioned reflexes. In its five year plan the academy will do everything possible for the greatest practical use of Pavlov's ideas in the clinic. The plan includes a thorough study of the war traumas, prevention and treatment of infections, children's mortality, tuberculosis, cancer and study of the organism's reactivity.

Four days of the session were devoted to eighteen scientific papers. Because of Academician Burdenko's illness his paper was read by Professor L. G. Smirnova. The material presented was devoted to contemporary problems of wound study and methods of treatment of wounds by intra-arterial penicillin and sulfonamide administration.

A member of the academy, Peter Zdrodovsky, who is studying problems of immunization and infection, recounted his studies on the reactivity of the organism. He expanded Pasteur's conception of the micro-organism's importance in infectious diseases, giving most attention to study of micro-organisms.

Academician Anichkov's paper was devoted to experimental autoinfection. In laboratory animals he produced experimental appendicitis, inflammation of the bile ducts and purulent pleuritis without exogenous provocation, by means of simply breaking the natural defensive mechanisms of the organism. The resulting diseases are similar to those in human beings.

At the first meeting, on the request of Academician Burdenko, who was seriously ill, Academician Nikolai N. Anichkov was elected president. He is famed for his researches in pathologic anatomy and pathophysiology, particularly on arteriosclerosis. For his works on the pathology of the cardiovascular system he was awarded a Stalin Prize.

At the meetings of October 28 and 29, out of 700 candidates nominated by different scientific organizations 3 new members and 45 corresponding members were elected. New academy members are Professor Alexander Vishnevsky, known for his method of anesthesia (the procaine block), Professor Richard

Fronstein, Soviet authority on urology and author of 125 scientific works on this subject and Professor Peter Kupalov, Academician Pavlov's pupil, author of 65 works and approximately 200 works on physiology conducted under his guidance.

November 2 a new first vice president was elected—Professor Alexei Abrikosov, specialist in pathologic anatomy. The vice presidents are members of the academy Nikolai Kuprianov and Ivan Davidovsky. Another member of the academy, Professor Vladimir V. Parin, was elected secretary.

The Death of Nikolai Burdenko

November 11 the Soviet surgeon and organizer of military medicine Academician Nikolai Nilovich Burdenko died in Moscow at the age of 68. During the first world war, when the Yuryev University was evacuated to Voronezh, Professor Burdenko proved himself a great organizer and excellent surgeon. Soon after the February Revolution of 1917, Professor Burdenko was appointed principal military health inspector of the Russian troops and in the civil war soon after organized the medical department in the Red army, then only being formed. He founded the Neurosurgical Institute of Moscow, the first Institute in Russia where complicated operations on the nervous system were performed.

During the second world war he not only performed numerous operations but was a leader of scientific and investigative work. With Burdenko's name are associated problems on shock, bullet wounds, deep tissue antiseptics and prophylaxis of severe complications of postoperative traumas. For his patriotic services he was decorated with many orders, including the title Hero of Socialist Labor.

BRAZIL

(From Our Regular Correspondent)

Rio de Janeiro, Feb. 12, 1947.

Tuberculous Infection in Porto Alegre University Students

Drs. Gumercindo Sayago, professor at the University of Cordoba, Argentina, and Antonio G. Arroyo, phthisiologist, Belem Sanatorium, Porto Alegre, have published a report of their tuberculin and x-ray investigation of 587 students of the medical, dental and pharmacy schools of the University of Porto Alegre. The city of Porto Alegre (population 285,000), capital of the state of Rio Grande do Sul, in the temperate southern part of Brazil, has had a tuberculosis death rate of about 400 per hundred thousand in recent years.

Mantoux tuberculin tests were made at first with 0.1 c. of old tuberculin diluted to 1 : 1,000; if a negative result was observed, a second test was performed with 0.1 cc. diluted to 1 : 10. The 95.8 per cent positive to tuberculin is in contrast to the 70 per cent positive among high school students and 86.1 per cent among college students of the city, according to results obtained by Sayago in 1944. The roentgenologic study of the same group disclosed that "inapparent" tuberculosis was rather rare (0.6 per cent of active lesions and 2.7 per cent of suggestive pictures), which seems somewhat in contradiction to the death rate in the city at large as well as to the rate of positivity to tuberculin. Sayago and Arroyo believe that a more accurate study of the students in that group of "suggestive" x-ray pictures, including a thorough bacteriologic examination of the gastric content, as well as a larger percentage of students of the last two years than that included in the investigation, would better explain this contradictory fact. At any rate the authors believe it would be hardly acceptable to explain the presence of so few active or suspected pulmonary lesions as the direct result of a rapidly evolving disease, such as reported by Edwards among the colored population of Harlem. The results of the present investigation seem to evidence the need of the establishment of a routine service of tuberculin-roentgenologic examination of both college and university students.

Congenital Papillary Melanosis

Dr. Paulo Filho, an ophthalmologist in Rio de Janeiro, has described the result of the clinical and pathologic examination of 1,000 eyes of 500 patients in whom both these organs were in good condition as far as ophthalmoscopy revealed. Of the thousand eyes 18, or 1.8 per cent, were found with congenital papillary pigmentation (0.9 per cent of the patients). The author believes that this relatively high frequency of melanosis has not been found by other practitioners because they have not had their attention concentrated on this objective. All the patients were white persons. According to the eye involved, in 12 patients the melanosis was present in the left eye (66⅔ per cent), in 5 patients in the right eye (27.8 per cent), and in one in both of the eyes (5.5 per cent). In reference to the position of the lesion in the papillary area, in 10 cases (55.5 per cent) the melanosis was in the temporal half, in 7 cases (40 per cent) the melanosis was in the nasal half, and in 1 case (5.5 per cent) in the vertical meridian. The histologic aspect was studied in 149 slides with material taken from 35 eyes in which there was a small portion of the optic nerve. Pigmented cells were found in 4 per cent of the slides, or in 14.3 per cent of the specimens; however, in no case was the pigmentation localized in the papillary tissue itself, being always behind the lamina cribrosa and the conjunctive fibers of the nervous bundles. The author does not believe that in the cases reported in the literature as having acquired pigmentation (traumatic and the like) the lesions have really this origin; he thinks that melanosis always existed before the injury. He concludes that malignant melanomas of the optic disk are directly derived from groups of cells congenitally existing in the papilla.

Dr. Fred L. Soper

The election of Dr. Fred L. Soper to the post of director of the Pan American Sanitary Bureau, succeeding Dr. Hugh S. Cumming, has been received with great pleasure by Brazilian physicians. As a representative of the International Health Division of the Rockefeller Foundation in Brazil, Dr. Soper proved to be an active and able sanitary worker, to whom the health of the country owes a great deal. Nobody will forget, as one leading representative of the medical profession said, that he was the driving force in the difficult campaign which succeeded in the eradication of Gambiae mosquitoes from the states of Ceará and Rio Grande do Norte, where they had been imported from Africa and were causing considerable damage to the population of the northeastern section of the country. At the head of the Pan American Sanitary Bureau, it is expected that Dr. Soper will be able to enlarge the usefulness of the organization in order to meet more effectively the urgent and important health problems of the South American peoples.

Brief Items

Dr. Enrique V. Sivila, professor of phthisiology, University of Sucre, Bolivia, left Rio de Janeiro for his country after a stay of several months at the Miguel Pereira Tuberculosis Hospital and the BCG division of the Ataulpho de Paiva Foundation of Rio de Janeiro.

Dr. J. Martagão Gesteira, professor of pediatrics at the University of Rio de Janeiro, has been appointed director of the Bureau of Child Welfare of the National Department of Health.

Dr. João Cardoso de Castro, surgeon of the Municipal Hospital of Rio de Janeiro, has been appointed professor of clinical surgery at the Faculdade de Ciencias Medicas, a medical school independent of the University of Rio de Janeiro.

The Hospital Santa Maria, a great municipal institution for the treatment of tuberculous patients, located at Jacarepagua, a suburb of Rio de Janeiro, has been provided with a new 50 bed pavilion for the special use of city employees.

Correspondence

FEE SPLITTING AND REBATES

To the Editor:—It is a sad commentary on the ethical conscience of the medical profession when public sentiment and resentment have to be invoked to overcome a malodorous practice which moral suasion within its own ranks has been found powerless to combat.

The public has recently been treated to an exposé that brought a shock to the laity and a blush of shame to every right thinking member of the medical profession. While it was commonly known—or at any rate suspected—that a number of physicians in special fields (this particular exposé referred to ophthalmologists only) were receiving rebates ("kickbacks") from manufacturing concerns, it was not generally realized how widespread this pernicious and reprehensible practice had become or how large a percentage of prominent specialists were to be found among the guilty. Explanations and justifications galore were forthcoming, but, far from their exhibiting a guilty conscience, the offenders in many instances brazenly wailed that a lucrative practice, long hallowed by usage and common consent, was not to be interfered with by reformers or snoopers. The wide publicity given this nefarious and dishonest business in the lay and medical press was a deserved rebuke, and the perpetrators can hardly ask for protection or support from fellow men who are believers in the sanctity of a code of ethical behavior.

Corrective measures are, of course, called for, and it is expected that the groups involved will hastily institute the needed steps to purge themselves of these frauds on the public. Theirs is the duty to demonstrate a moral awakening. Whether even this will be sufficient to stem the cupidity of those who place gross commercialization of medical practice above ethical behavior waits to be seen.

There is a clause in the Fellowship Pledge of the American College of Surgeons specifically making membership in that organization untenable to any one who has commercial relations with "makers of surgical appliances and optical instruments." However, no mention of such a practice as being an infraction of ethical principles is noted in the section on "Ethics and Ethical Relationships" as published in the American College's Manual of Hospital Standardization; and, after all, it is the Manual, and not the Fellowship Pledge, which is presented as a model for the guidance of hospital standards. The Manual is specific in its detail of rules of procedure and management for institutions of small and large bed capacity, but it is difficult to understand why the framers of this valuable guide failed to incorporate the same standard for membership on hospital staffs as is demanded for membership in the college. Specifically, mention is made only of the splitting of fees between physician and surgeon, thus singling out the surgeon alone as the potential offender. How long will ethical surgeons be content to see their specialty—and theirs only—besmirched by such an innuendo? (Parenthetically be it stated that I am not a surgeon.)

It is my conviction that if hospitals see a need to list any rules at all of moral conduct that are to govern their staff members they should go beyond the condemnation of fee splitting alone in an effort to keep their ranks unsullied. Let them boldly condemn other fraudulent methods that are known to be current practice. To this end I would propose that hospitals add some such paragraph as the following to the section relating to fee splitting, namely:

> Staff members shall pledge themselves not to receive or solicit rebates from any commercial medical or surgical house as partial compensation in lieu of or in addition to payment for professional services rendered a patient.

Such a pledge could and should be willingly subscribed to by all physicians of decent mind and intent. And such a provision, now in the Fellowship Pledge of the college but—strangely enough—omitted in the college's Manual for Hospital Standardization, if incorporated in the by-laws of all hospitals, will absolve the surgeon of the suspicion that he is the only practitioner who needs watching. And too, such a statement will define as dishonorable a deeply rooted practice that has tainted a noble calling and give courage to hospital authorities to deal with unethical infractions which they either have long recognized and to which they have given silent consent, or which they hitherto felt themselves powerless to combat. Failure of hospitals to take action is tacit condonation of an indefensible, pernicious practice.

ARTHUR J. PATEK, M.D., Milwaukee.

OCCURRENCE OF PSEUDOGLYCOSURIA IN PATIENTS TREATED WITH PENICILLIN

To the Editor:—Observations recently made on 2 patients treated with parenterally administered penicillin indicate occurrence of a source of error in the routine copper reduction clinical test for detection of glycosuria.

A boy aged 2½ years, acutely ill with severe infection and signs and symptoms of cerebral irritation, received 20,000 Oxford units of penicillin every three hours intramuscularly for a period of approximately eighteen hours; a routine laboratory test for sugar in the urine revealed 1 plus (blood sugar 0.090 mg. per hundred cubic centimeters).

A diabetic man aged 87, moderately acutely ill, treated for rhinopharyngitis and mild bronchitis with 300,000 Oxford units of penicillin in wax-oil given intramuscularly on three successive days and previously well controlled on insulin and diet, showed on the fourth day 3 plus and 2 plus reduction of copper sulfate of Benedict's solution, at the same time displaying signs and symptoms of hypoglycemia, relieved by administration of available glucose. Penicillin solution with a concentration of 10,000 Oxford units per cubic centimeter reduced copper sulfate of Benedict's solution in vitro. Control test of boiling the same Benedict's solution for six minutes did not show any change in the reagent.

EPHRAIM B. BOLDYREFF, M.D., Grand Rapids, Mich.

MEDICAL LITERATURE OF THE NETHERLANDS

To the Editor:—We wish to express our thanks to Mrs. C. A. Taylor for her very helpful suggestion in the February 1 issue of THE JOURNAL, page 345. During the war the Netherlands Government Commission for Scientific Documentation collected scientific periodicals for Holland. But, as Mrs. Taylor noted, the need for medical literature is tremendous. Though we have shipped much material, we were forced to disappoint many libraries and institutions because of our limited funds. Therefore we will be very glad to supply addresses and further information to physicians who are interested in helping their colleagues in the Netherlands. Or, if doctors will send old copies of THE JOURNAL (and other medical publications) to our New York address we will gladly forward them to Holland.

CONSTANCE H. KOUWER
Librarian, Netherlands Government Commission
for Scientific Documentation.
5th Floor, 10 Rockefeller Plaza,
New York 20.

INCOMPATIBILITY OF RUTIN AND SULFONAMIDES

To the Editor:—The increasing use of rutin will undoubtedly be stimulated even more by your editorial on rutin therapy, page 247 of the January 25 issue of THE JOURNAL. A recent development in the case which I reported and which you quoted in the editorial leads me to call attention to my experience. This development represents a potential pitfall which was most distressing to my patient; in reporting it I hope that others may avoid a similar difficulty.

My patient continued entirely well until the recent development of a urinary tract infection which led to the administration of sulfadiazine by his urologist. During the administration of the sulfadiazine the patient began to have nosebleeds again and evidence of major gastrointestinal hemorrhage. The latter finally required readmission to the hospital and three transfusions. In the meantime I got in touch with Dr. Griffith in Philadelphia and he advised me that he had had similar experience with sulfonamides interfering with the efficacy of rutin. With this information the sulfadiazine was discontinued, the dose of rutin was doubled and the bleeding promptly ceased with no recurrence since then.

The hemorrhage was so profuse, the danger to the patient's life so profound and his faith in rutin so disturbed, that I considered it desirable to send this communication to emphasize the apparent interference of sulfonamides on the action of rutin. As far as I know, sulfonamides can be given, but the dose of rutin should be doubled or tripled under such circumstances, and a careful watch should be maintained for bleeding.

SAMUEL D. KUSHLAN, M.D., New Haven, Conn.

COUGH SYRUP

To the Editor:—The editorial comment on the cough syrup in THE JOURNAL Dec. 28, 1946, requires some amendment:

I have been working on research with expectorant drugs for almost ten years in place of the six years mentioned. I did not assume that cough syrups were expectorant but rather tried to find out what value they have, if any, in the treatment of cough. I did not find that simple syrups act as expectorants but rather as demulcent antitussives. I have found that most expectorant drugs act reflexly from the stomach. Converting a dry cough to a "productive" cough is not, from my work, the action of expectorants. Practically all expectorants do not augment the volume of sputum ("expectorates") but rather soothe a cough by increasing the volume of respiratory tract fluid, which, in practically all cases, acts as a demulcent to the irritated lining of the respiratory tree and is not expectorated but rather carried up the trachea and then automatically swallowed.

ELDON M. BOYD, M.D., Kingston, Ont.
Professor of Pharmacology, Queen's
University Faculty of Medicine.

PREVENTION OF CONGENITAL MALFORMATIONS

To the Editor:—In reference to the article "Prevention of Congenital Malformations" which appeared in THE JOURNAL, Nov. 16, 1946, I should like to add that another factor which was not mentioned and which may play a role is radiation (x-ray) during the gestation period. I wrote you earlier about the role nutrition may play but was unable to give the reference to an article which appeared about four years ago. Neither of these factors probably has been fully evaluated in human beings and I hesitate to comment on their importance without having the original papers at my disposal.

HANS G. KEITEL, Lieutenant, M. C., A. U. S.
Station Hospital, Fort Hamilton, Brooklyn.

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

NATIONAL BOARD OF MEDICAL EXAMINERS
EXAMINING BOARDS IN SPECIALTIES

Examinations of the National Board of Medical Examiners and the Examining Boards in Specialties were published in THE JOURNAL, March 1, page 645.

BOARDS OF MEDICAL EXAMINERS

ALABAMA: Montgomery, June 24-26. Sec., Dr. D. G. Gill, 519 Dexter Ave., Montgomery 4.

ARIZONA: * *Endorsement.* Phoenix, April 1-2. *Examination.* Phoenix, April 5. Sec., Dr. J. H. Patterson, 826 Security Bldg., Phoenix.

ARKANSAS: * *Medical. Examination.* June 5-6. Sec., Medical Board of the Arkansas Medical Society, Dr. L. J. Kosminsky, Texarkana. *Eclectic.* Little Rock, June 5. Sec., Dr. C. H. Young, 1415 Main St., Little Rock.

CALIFORNIA: *Examination.* Los Angeles, March 10-13. Sec., Dr. Frederick N. Scatena, 1020 N. St., Sacramento 14.

CONNECTICUT: * *Medical. Examination.* Hartford, March 11-12. Sec. to the Board, Dr. Creighton Barker, 258 Church St., New Haven. *Homeopathic.* Derby, March 11. Sec., Dr. J. H. Evans, 1488 Chapel St., New Haven.

DELAWARE: *Examination.* Dover, July 8-10. *Endorsement.* Dover, July 15. Sec., Medical Council of Delaware, Dr. J. S. McDaniel, 229 S. State St., Dover.

FLORIDA: * Jacksonville, June 24-25. Sec., Dr. Harold D. Van Schaick, 2736 S. W. Seventh Ave., Miami 36.

GEORGIA: Atlanta and Augusta, June. Sec., State Examining Boards, Mr. R. C. Coleman, 111 State Capitol, Atlanta 3.

ILLINOIS: Chicago, April 1-3. Supt. of Registration, Department of Registration & Education, Mr. Philip Harman, Springfield.

INDIANA: *Examination.* Indianapolis, June. Exec. Sec., Board of Medical Registration and Examination, Miss Ruth V. Kirk, 627 K. of P. Bldg., Indianapolis.

IOWA: * *Examination.* Iowa City, March 17-19. Corresponding Sec., Division of Licensure and Registration, Mr. H. W. Grefe, Capitol Bldg., Des Moines 19.

KANSAS: *Examination.* Kansas City, March 25-26. Sec., Board of Medical Registration and Examination, Dr. J. F. Hassig, 905 N. Seventh St., Kansas City 10.

LOUISIANA: New Orleans, March 13-15. Sec., Dr. R. B. Harrison, 1507 Hibernia Bank Bldg., New Orleans 12.

MAINE: Portland, March 11-12. Sec., Board of Registration of Medicine, Dr. A. P. Leighton, 192 State St., Portland.

MARYLAND: *Medical Examination.* Baltimore, June 17-20. Sec., Dr. E. H. Kloman, 1215 Cathedral St., Baltimore. *Homeopathic.* Baltimore, June 10-11. Sec., Dr. J. A. Evans, 612 W. 40th St., Baltimore.

MASSACHUSETTS: Boston, March 11-14. Sec., Board of Registration in Medicine, Dr. H. Q. Gallupe, 413-F State House, Boston 33.

MINNESOTA: * Minneapolis, April 15-17. Sec., Dr. J. F. Du Bois, 230 Lowry Medical Arts Bldg., St. Paul.

MONTANA: Helena, April 1-2. Sec., Dr. O. G. Klein, First National Bank Bldg., Helena.

NEBRASKA: * *Examination.* Omaha, June. Dir., Bureau of Examining Boards, Mr. Oscar F. Humble, State Capitol Bldg., Lincoln.

NEVADA: *Examination.* Carson City, May 5. Sec., Dr. G. H. Ross, 215 N. Carson St., Carson City.

NEW HAMPSHIRE: Concord, March 13. Sec., Board of Registration in Medicine, Dr. John S. Wheeler, 107 State House, Concord.

NEW JERSEY: Trenton, June 17-18. Sec., Dr. E. S. Hallinger, 28 W. State St., Trenton.

NEW MEXICO: * Santa Fe, April 7-8. Sec., Dr. LeGrand Ward, 141 Palace Ave., Santa Fe.

NORTH CAROLINA: *Endorsement.* Winston-Salem, April 30, June 24. *Examination.* Raleigh, June 23-26. Acting Sec., Mrs. L. McNeill, 226 Hillsboro St., Raleigh.

NORTH DAKOTA: Grand Forks, July 1-4. Sec., Dr. G. M. Williamson, 4¼ S. Third St., Grand Forks.

OHIO: *Examination.* Columbus, June 17-20. Sec., Dr. H. M. Platter, 21 W. Broad St., Columbus.

OREGON: * *Endorsement.* Portland, April 25-26. Exec. Sec., Miss L. M. Conlee, 608 Failing Bldg., Portland 4.

PENNSYLVANIA: Philadelphia and Pittsburgh, July. Acting Sec., Bureau of Professional Licensi[illegible] Instruction, Mrs. M. G. Steiner, 351 Educat[illegible]

RHODE ISLAND: * Providence, [illegible] of Examiners, Mr. Thomas B. Casey, 366 Sta[illegible]

SOUTH CAROLINA: Columbia, June [illegible]. Sec., Dr. N. B. Heyward, 1329 Blanding St., Columbia.

SOUTH DAKOTA: * Pierre, July 15-16. Sec., Medical Licensure, State Board of Health, Dr. Gilbert Cottam, Capitol Bldg., Pierre.

WEST VIRGINIA: Charleston, March 31-April 2. Commissioner, Public Health Council, Dr. N. H. Dyer, State Capitol, Charleston 5.

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* Basic Science Certificate required.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

ARIZONA: March 18, Sec., Mr. Francis A. Roy, Science Hall, University of Arizona, Tucson.

DISTRICT OF COLUMBIA: Washington, April 21-22. Sec., Commission on Licensure, Dr. G. C. Ruhland, 6150 E. Municipal Bldg., Washington 1.

FLORIDA: May 31. Final date for filing application is May 16. Sec., Dr. M. W. Emmel, University of Florida, Gainesville.

IOWA: Des Moines, April 8. Sec., Dr. Ben H. Peterson, Coe College, Cedar Rapids.

MICHIGAN: Ann Arbor and Detroit, May 9-10. Sec., Miss Eloise Lebeau, 101 N. Walnut St., Lansing.

MINNESOTA: Minneapolis, April 1-2. Sec., Dr. Raymond N. Bieter, 105 Millard Hall, University of Minnesota, Minneapolis 14.

NEBRASKA: Omaha, May 6-7. Dir., Bureau of Examining Boards, State Department of Health, Mr. O. F. Humble, 1009 State Capitol Bldg., Lincoln 9.

OKLAHOMA: Oklahoma City, March 17. Pres., Dr. Sam A. McKeel, Ada.

SOUTH DAKOTA: Vermillion, June 6-7. Sec., Dr. G. M. Evans, Yankton.

TENNESSEE: Memphis & Nashville, March 24-25. Sec., Dr. O. W. Hyman, 874 Union Ave., Memphis.

WISCONSIN: Madison, April 12. Sec., Dr. William H. Barber, Scott & Watson Sts., Ripon.

Council on Medical Education and Hospitals

There has been considerable misunderstanding in some quarters as to the Council's policies and recommendations for basic science instruction in approved hospital residencies in the various special fields of medicine. The Council therefore submits the following statement for the guidance of hospitals and staff. It is anticipated that this statement, with perhaps minor modifications, will be incorporated in the next revision of the Council's Essentials of Approved Residencies and Fellowships.

Victor Johnson, M.D., *Secretary.*

APPLIED BASIC MEDICAL SCIENCES

Competence in any of the various specialties in clinical medicine requires a knowledge of the basic medical sciences employed in that specialty. Therefore, residency and fellowship programs acceptable to the Council and the American boards must provide for training in the applied basic medical sciences. Such training does not necessitate formal course work, specific assigned laboratory exercises or affiliation of the residency hospital with a medical school; it should be distinctly of an applied nature, closely integrated with the clinical experience of the resident.

Any resident seeking competence or certification in a specialty must be able to apply at least the following basic sciences to his special field of medicine: anatomy, bacteriology, biochemistry, pathology, pharmacology and physiology. Undergraduate education in an approved medical school provides a background for an understanding of these sciences, so that the special training of the residency should not include hasty and inadequate reviews of these subjects, but rather their application to a given specialty.

Anatomy.—Anatomy at the residency level may well be taught, reviewed or learned from the living body, on the operating or examining table or from the fresh tissues in the pathologic laboratory. More important in anatomic instruction of residents than an available anatomic laboratory are the attitude and enthusiasm of the hospital staff in availing themselves of opportunities to teach and learn applied gross and microscopic anatomy from clinical and pathologic material. Opportunities for anatomic dissection, when available, may be utilized for supplementary training.

Bacteriology.—The hospital facilities and professional personnel in bacteriology and in the allied sciences of parasitology, mycology, immunology and serology should be such as to afford the resident opportunity and incentive to broaden his existing knowledge in these subjects in the light of his special clinical assignments and interests.

Biochemistry.—The hospital biochemistry laboratory should provide the resident with opportunities to broaden his knowledge of biochemistry as related to such clinical problems as he may encounter in his specialty; for example, water balance, acid-base equilibrium, glucose tolerance and blood or urine levels of significant metabolic, nutritional or therapeutic elements. Such applied basic science work in biochemistry may be far more valuable than a superficial review course in the field.

Pathology.—In a well conducted department of pathology of an acceptable residency hospital there is opportunity for correlating much basic medical science material with problems of clinical medicine. Applied gross and microscopic anatomy may be effectively learned from necropsy and surgical specimens. The clinical-pathologic conference should and can be one of the most effective devices for correlation of the basic sciences with clinical medicine.

Pharmacology.—Since the principles of pharmacology are involved in every therapeutic administration of chemical substances to patients, the wards of the residency hospital provide very suitable opportunities for the resident to apply and expand the knowledge of pharmacology previously gained in medical school.

Physiology.—Historically, one of the most fruitful methods of investigation into the normal functions of the body has been the study of abnormality of function, to which the resident in clinical medicine is constantly exposed. Clinical medicine affords a rich field for the study of physiology and a potent stimulus to the resident to apply the basic principles of this science. Much of the equipment and special apparatus employed in clinical studies of the patient are likewise used in physiology, so that clinical studies provide ample opportunity and stimulation for the resident to supplement his knowledge of physiology with applications of the science to clinical problems. Encouragement and opportunity for an enlarged understanding of body function in health and disease should be part of the experience of the resident in any of the specialties in the course of his clinical work.

TEACHING AND INVESTIGATION

Residents and fellows should be assigned to teaching responsibilities as their experience increases. The stimulating teacher-student relationship should be part of the resident's experience, not only as the student of the attending physician, but as the teacher of interns and nurses and, in medical school hospitals, of junior and senior medical students.

When the facilities of an institution warrant, and when the residents are competent and interested, they should be encouraged to engage in research, not only as an educational experience, but to increase the effectiveness of the hospital and its staff in caring for the sick. Such investigation may take the form of research in the hospital laboratories or words, summaries of medical literature or the preparation of statistical analyses derived from the hospital record department.

Affiliation of a residency hospital with a medical school is not essential for an acceptable educational program. Those hospitals having such an affiliation are in a position to provide the interested resident with educational opportunities supplementary to the training required for competence in the specialty. Such opportunities lie particularly in the fields of advanced laboratory training and research. Qualified and interested residents and fellows should be encouraged to undertake research programs at medical schools, within the limitations of available facilities. Interruption of the hospital assignments with a period of research in a medical school basic science department may be of inestimable value, although such residency programs will probably be possible only in exceptional cases. While medical school affiliations have greatly strengthened residency and fellowship programs, most approved hospitals have been able to conduct acceptable programs without such affiliation.

Medical Motion Pictures

FILM REVIEW

Energy Release from Food. 16 mm., color, sound, 973 feet (1 reel), showing time twenty-six minutes. Produced in 1946, by Audio Productions, Inc. Procurable on loan from the Upjohn Company, Kalamazoo, Mich.

This film presents by means of animated diagrams a readily understandable explanation of the role of nicotinic acid, thiamine and riboflavin in carbohydrate metabolism. Attention is focused on those mechanisms which furnish energy for carrying out bodily functions. The diagrams cleverly illustrate some of the reactions understood with difficulty which involve enzymatic oxidation of carbohydrate by hydrogen transfer. The action of enzymes and the precise role of the B vitamins in their action are shown. In addition to the animated diagrams, a portion of the film is devoted to a short description of certain clinical conditions characterized by a deficiency of the B vitamins.

Portions of the picture would be terribly obvious to some audiences and beyond the comprehension of others. While it is impossible ever to satisfy critics on this point, it does seem that in the present case something could be gained by making two films, one definitely for circulation among medical students in their biochemistry course and nutritionists, the other for groups of practicing physicians assembled in county society meetings or at hospital staff conferences. The pictures of cheilosis are frankly hackneyed and no longer convincing in view of recent work indicating that it is an unreliable index of hypovitaminosis. The photography is excellent.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Medical Services: California Physicians' Service Not Engaged in Practice of Insurance.—The plaintiff, California Physicians' Service, filed suit for a declaratory judgment asking that its business and operations be declared to constitute neither the practice of insurance nor the corporate practice of medicine and surgery. From a judgment so finding the defendant, insurance commissioner, appealed to the Supreme Court of California.

The California Physicians' Service was organized by the medical profession in 1939 to meet the need of persons in the lower income groups for medical care and surgical service. It holds a certificate of compliance with the provisions of section 593a of the civil code, relating to health service corporations, issued by the state board of medical examiners. The incorporators were all officers and councilors of the California Medical Association, and the purpose of the corporation, as expressed by its articles of incorporation, is to establish a voluntary medical service plan, participated in by all doctors of medicine desiring to do so, which will enable the people of the state of California to obtain prompt and adequate medical attention and hospital care whenever needed on a periodic budgeting basis without injury to the standards of medical service, without disruption of the proper physician-patient relation and without profit to any agency, and will assure that all payments made by patients, except administrative costs, will be utilized for medical service and hospital care and not otherwise. To effectuate such an objective, the by-laws declare that every resident doctor of medicine who holds "a valid and unrevoked physician's and surgeon's certificate issued to him by the Board of Medical Examiners of the State of California shall be invited by the board of trustees to become a professional member . . . it being one of the fundamental purposes of this corporation that professional membership . . . shall embrace all legally licensed Doctors of Medicine . . ." The contract which the California Physicians' Service enters into with various groups throughout the state provides: the California Physicians' Service is acting as the agent of the group and of those of its individuals who become beneficiary members in California Physicians' Service for the purpose of securing to said members medical services through professional members of California Physicians' Service; hospital care may be obtained through nonprofit hospital service corporations operating pursuant to chapters 9 or 11A of part II, division II, of the insurance code of the state of California; each beneficiary member of California Physicians' Service shall be entitled, during the time that he is such a beneficiary member, to secure when needed, and for a period of not to exceed one year for any one illness or injury, medical and surgical services from those doctors of medicine in the state of California who are professional members of C. P. S.; the services offered to beneficiary members of C. P. S. are offered personally to said members by the professional members of C. P. S., and the right of said members to receive the same is not transferable. A substantially similar contract relating to a rural health service has been entered into between the plaintiff and the Farm Security Administration.

The defendant's major contention on appeal is that the California Physicians' Service is engaged in the business of transacting insurance and therefore is subject to the regulatory laws governing such corporations. The plaintiff, on the other hand, asserts that it is rendering personal service, as distinguished from indemnity, compensation for which is limited to the resources of a pooled fund; that the professional members, not the service, assume any and all risk; and that it is actually a producer-consumer cooperative. Furthermore, said the plaintiff, the state has declared that a nonprofit membership corporation may lawfully defray or assume the cost of medical and surgical services or render any such service.

The Supreme Court first pointed out that the legislature of California has defined insurance as "a contract whereby one undertakes to indemnify another against loss, damage, or liability arising from a contingent or unknown event." "Whether the contract is one of insurance or of indemnity," said one court, "there must be a risk of loss to which one party may be subjected by contingent or future events and an assumption of it by legally binding arrangement by another. Even the most loosely stated conceptions of insurance and indemnity require these elements. Hazard is essential and equally so a shifting of its incidence. If there is no risk, or there being one it is not shifted to another or others, there can be neither insurance nor indemnity. Insurance also, by the better view, involved distribution of the risk, but distribution without assumption hardly can be held to be insurance." The business of the California Physicians' Service lacks one essential element necessary to bring it within the scope of the insurance laws, said the Supreme Court, for clearly it assumes no risk. Under the provisions of the contracts or group agreements, it is a mere agent or distributor of funds. It does not promise the beneficiary members that it will provide medical care; on the contrary, "the services which are offered to . . . beneficiary members of C. P. S. are offered personally to said members by the professional members of C. P. S. . . ." The amount of compensation of the professional members is variable and may be high or low, depending on the incidence of sickness and the number of beneficiary members paying dues. Therefore all risk is assumed by the physicians, not by the corporation, and the only effect of requiring compliance with regulatory status would be to compel the acquisition of reserves contrary to the established method of operation. But there is another and more compelling reason for holding that the service is not engaged in the insurance business, said the Supreme Court. Absence or presence of assumption of risk or peril is not the sole test to be applied in determining its status. The question is whether looking at the plan of operation as a whole, "service" rather than "indemnity" is its principal object and purpose. Certainly the objects and purposes of the California Physicians' Service have a wide scope in the field of social service. Probably there is no more impelling need than that of adequate medical care on a voluntary, low cost basis for persons of small income. The medical profession is endeavoring to meet that need and unquestionably this is "service" of a high order and not "indemnity." Furthermore, the legislature by the enactment of section 593a of the civil code, with its express provision for limited regulation of nonprofit organization of a professional character by the attorney general and the particular professional board, necessarily intended that such organization should be exempt from regulation by the insurance commissioner. One of the reasons behind the declaration of the earlier cases that it was against public policy for a corporation to engage in the practice of medicine was that the control of its activities was placed in the hands of laymen. To allow the insurance commissioner to impose the extensive regulations provided for in the insurance code on the activities of the service would result in the same evil. This conclusion, continued the Supreme Court, becomes more apparent when the purpose and nature of many of the legislative requirements are considered, particularly those relating to the maintenance of reserves and to the regulation of investments and financial operations. The extensive insurance regulations are designed primarily to protect the insured, or the public, from the insurer. Such regulations become important only if the insurer has assumed definite obligations. Conversely, it is evident that they are not intended to apply where no risk is assumed and no default can exist. Furthermore, by the very nature of its operations, the service could not accumulate vast reserves. The flow of funds from patient to physician is on a monthly basis of pay as you go, and to require reserves would be a useless and uneconomic waste. For these reasons, the Supreme Court concluded, the plaintiff is not engaged in the business of insurance within the meaning of the regulatory statutes but is subject to the limited supervision provided by section 593a of the civil code, with which it has complied. Accordingly the judgment in favor of the plaintiff was affirmed. —*California Physicians' Service v. Garrison, Insurance Commissioner, 172 P. (2d) 4 (Calif., 1946).*

Current Medical Literature

AMERICAN

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Titles marked with an asterisk (*) are abstracted below.

American J. Digestive Diseases, Fort Wayne, Ind.

13:373-398 (Dec.) 1946

*Toxic Sulfonamide Colitis. H. Gauss and L. J. Weinstein.—p. 373.

Simple Nonsphincteric Localized Esophageal Spasm: Case Report. M. Weiss and L. Long.—p. 375.

Modification of Plummer's Dilator for Treatment of Cardiospasm. E. Lundsteen.—p. 377.

Cancer of Stomach. J. A. Reed.—p. 379.

Effects of Polysaccharides on Appetite and Efficiency of Food Utilization in Growing Rat. B. H. Ershoff and H. B. McWilliams.—p. 385.

Gastragogue Effect of Laxatives and Allyl-Bromide Mixture. H. M. Feinblatt and E. A. Ferguson Jr.—p. 386.

Anal Fissure. D. C. Ditmore.—p. 391.

Toxic Sulfonamide Colitis.—Gauss and Weinstein report the histories of 3 patients who developed toxic colitis following oral administration of sulfonamides. In 1 patient sulfathiazole had caused the colitis and in the other 2 sulfapyridine. The 3 patients presented singularly similar clinical pictures of the digestive tract. Sigmoidoscopy showed a granular swollen hemorrhagic mucosa to the full length of the 25 cm. scope. The patients all had a diarrhea with frequent hemorrhagic stools associated with severe abdominal cramps. With the withdrawal of the sulfonamides the symptoms subsided and the colon returned to its normal appearance.

American Journal of Ophthalmology, Cincinnati

29:1355-1498 (Nov.) 1946

*Chemical Burns of Human Cornea. R. S. McLaughlin.—p. 1355.

Chemical Burns of Rabbit Cornea. C. P. Carpenter and H. F. Smyth Jr.—p. 1363.

Further Observations on Aqueous Veins. K. W. Ascher.—p. 1373.

Experimental Dinitrophenol Cataract. J. W. Bettman.—p. 1388.

Cataracta Glaucomatosa Acuta. H. S. Sugar.—p. 1396.

Determination of Ocular Tension and Rigidity in Rabbits. E. Schmerl and B. Steinberg.—p. 1400.

*Autonomic Nervous System in Ocular Diseases. D. O. Harrington. —p. 1405.

Pemphigus Conjunctivae: Report of 3 Cases. F. W. Newell and J. S. Greetbam.—p. 1426.

Effects of Atabrine on Human Visual System. L. R. Dame.—p. 1432.

Dust Borne Infection in Ophthalmic Surgery. M. H. Post.—p. 1435.

Chemical Burns of Human Cornea.—From a study of 500 consecutive cases of chemical burns of the cornea, McLaughlin concludes that: 1. Immediate first aid, followed by long flushing with water, is of the utmost importance; no attempt at neutralization is recommended. 2. Specialized treatment by an ophthalmologist should be given within two hours after the injury; further delay threatens recovery of full vision. 3. Denudation is the treatment of choice; 456 cases healed in forty-eight hours with no loss of vision, 37 healed slowly but without loss of vision and 7 cases healed with a residual loss of vision. The loss of vision in all 7 cases was the result of inadequate preliminary care or health conditions present before the eyes were burned.

Autonomic Nervous System in Ocular Diseases.—Harrington discusses these ocular manifestations of dysfunctions of the autonomic nervous system: central angiospastic retinopathy, ocular changes in Raynaud's disease, amaurosis fugax, migraine and commotio retinae. Typical case reports of each condition are presented. It is emphasized that the differences between amaurosis fugax, central angiospastic retinopathy and Raynaud's disease are only of degree. Migraine is a cerebral vasospastic disturbance with predominant ocular symptoms. Commotio retinae, which embraces all conditions producing retinal edema from chemical vasomotor disturbances, is a local rather than a general autonomic response. Psychic trauma in a susceptible individual can produce as profound organic changes as extremes of temperature, anoxemia or direct physical trauma.

American Journal of Physiology, Baltimore

147:603-758 (Dec.) 1946. **Partial Index**

*Relation Between Alveolar Carbon Dioxide Tension and Susceptibility to Decompression Sickness. R. Hodes and M. G. Larrabee.—p. 603.

Effect of Anoxic Anoxia on Urine Secretion in Anesthetized Dogs. J. C. Stickney, D. W. Northup and E. J. Van Liere.—p. 616.

Factors Influencing Reduction Time of Blood in Capillaries of Skin. G. B. Ray, Louise H. Ray and J. R. Johnson.—p. 630.

Experimental Hypertension in the Dog. A. Grollman.—p. 647.

Asphyxial Depolarization in Spinal Cord. A. Van Harreveld.—p. 669.

Limb Blood Flow and Vascular Resistance Changes in Dogs During Hemorrhagic Hypotension and Shock. R. W. Eckstein, I. M. Liebow and C. J. Wiggers.—p. 685.

Study of Effect of Limitation of Food Intake and Method of Feeding on Rate of Weight Gain During Hypothalamic Obesity in Albino Rat. C. M. Brooks and E. F. Lambert.—p. 695.

Study of Respiratory Quotient in Experimental Hypothalamic Obesity. C. McC. Brooks.—p. 727.

Study of Effect of Hypothalamic Lesions on Eating Habits of Albino Rat. C. McC. Brooks, R. A. Lockwood and M. L. Wiggins.—p. 735.

Effects of Insulin on Increase in Liver Fat Produced by Anterior Pituitary Extracts. J. Campbell.—p. 742.

Alveolar Carbon Dioxide Tension and Decompression Sickness.—Hodes and Larrabee say that cyclic and diurnal changes suggest that susceptibility to decompression sickness is influenced by physiologic factors which vary in a similar fashion. They investigated the relation between alveolar carbon dioxide tension and susceptibility to decompression sickness by comparing the carbon dioxide tension in alveolar air collected shortly before decompression with the ability of the subject to remain for two hours in an altitude chamber at a pressure equivalent to 38,000 feet. They found that susceptibility increases with alveolar carbon dioxide tension. Subjects were forced to descend whenever the alveolar carbon dioxide tension was more than 43 mm. of mercury. In contrast, no subject was forced to descend when his alveolar carbon dioxide tension was less than 38 mm. of mercury. Each subject whose tolerance varied during the course of these experiments passed fewer tests when his alveolar carbon dioxide tension was high than when it was low.

American Journal of Public Health, New York

36:1365-1474 (Dec.) 1946

*Use of Body Measurements in School Health Program. H. C. Stuart and H. V. *Meredith.—p. 1365.*

Participation by State and Local Health Departments in Current Medical Care Programs. J. W. Mountain.—p. 1387.

*Varieties of Coccidioidal Infection in Relation to Epidemiology and Control of Diseases. C. E. Smith, R. R. Beard, E. G. Whiting and H. G. Rosenberger.—p. 1394.

*Outbreak of Trichinosis in New York City, with Special Reference to Intradermal and Precipitin Tests. H. B. Shookhoff, W. B. Birnkrant and M. Greenberg.—p. 1403.

Record Linkage. H. L. Dunn.—p. 1412.

Persistence of Hypersensitivity to Old Tuberculin Following Primary Tuberculosis in Childhood: Long Term Study. Janet B. Hardy. —p. 1417.

Rodent Control with 1080, ANTU, and Other War Developed Toxic Agents. J. C. Ward.—p. 1427.

Postwar Control of Flies and Mosquitoes on Public Health Programs. M. D. Hollis and H. L. Fellton.—p. 1432.

Body Measurements in School Health Program.—Stuart and Meredith consider it desirable that school health services take body measurements of all school children once or twice yearly. Interpretation should take into account the position held by each child in each measurement at each examination in relation to the ranges of variability for sex and age. It is important that all measurements be taken carefully according to the procedures used in establishing the norms. The physician should have these data in hand at the time of examinations and evaluate them in the light of clinical observations. It is proposed that weight, height, hip width, chest circumference and leg girth be adopted as basic measurements. Manifest changes should lead to special examinations if they would not otherwise be made routinely.

Varieties of Coccidioidal Infection.—By a program of systematically testing with coccidiodin new permanent personnel at four San Joaquin Valley army air fields and periodically retesting those originally negative, Smith and his associates ascertained the proportion of the various types of coccidioidomycosis. Sixty per cent of 1,351 infections were symptomless, and only 25 per cent of the infections were clinically manifest. Erythema nodosum occurred in 4.6 per cent. Disseminations occurred in about 1 per cent of the clinically manifest infections in the white males and 0.25 per cent of their total infections. The disseminations were over ten times as frequent in the Negro males, occurring in about 12 per cent of the clinical cases and in about 3.5 per cent of the total infections. Progressive coccidioidomycosis is analogous to the overwhelming tuberculosis of infancy and early childhood rather than with the reinfection type of tuberculosis. White persons have not had the generations of experience with Coccidioides which would enable them to become better adapted to survival. Their contact with Coccidioides is as virgin as that of the Negro.

Trichinosis in New York City.—Shookhoff and his associates say that during February and March 1945 New York City experienced the largest outbreak of trichinosis in the history of its health department. Eighty-four persons became ill with the disease as the result of the consumption of pork products supplied by a single wholesaler. The trichinosis resulted chiefly from the consumption of uncooked sausage type of pork. The most common type of onset was with edema of the eyelids and fever. Gastrointestinal symptoms occurred in a minority of the cases. Eosinophilia was the most constant early laboratory finding. The precipitin test was found more useful than the intradermal test in diagnosis, since it became positive earlier. There were no fatalities.

Annals of Surgery, Philadelphia

124:991-1182 (Dec.) 1946

Radical Surgery for Certain Cases of Pancreatic Fibrosis Associated with Calcareous Deposits. A. O. Whipple.—p. 991.
Pancreatitis as Cause of Complete Obstruction of Common Duct. J. D. Bisgard.—p. 1009.
Results from Using Vitallium Tubes in Biliary Surgery. H. E. Pearse.—p. 1020.
*Tetanus—Preventable Disease: Including an Experience with Civilian Casualties in Battle for Manila (1945). F. Glenn.—p. 1030.
Surgical Treatment of Angina Pectoris: Experiences with Ligation of Great Cardiac Vein and Pericoronary Neurectomy. M. Fauteux.—p. 1041.
Management and Rehabilitation of Naval Battle Casualty Amputees. T. C. Ryan, D. T. Jones, W. L. White and others.—p. 1047.
New Viewpoint Toward Spinal Cord Injuries. R. H. Kennedy.—p. 1057.
Operative Results in Intervertebral Disks. F. C. Grant.—p. 1066.
Penetrating Wounds of Chest in Pacific Area: Analysis of 180 Cases. W. L. Rogers and E. Holman.—p. 1076.
Fractures of Os Calcis: Their Treatment by Triradiate Traction and Subastragalar Fusion. R. I. Harris.—p. 1082.
*Composite Free Grafts of Two Surfaces of Skin and Cartilage from Ear. J. B. Brown and B. Cannon.—p. 1101.
Unusual Surgical Lesions of Umbilicus: Report of Cases of Congenital Origin. C. Williams.—p. 1108.
*Studies on Effects of Adult Animal Tissue Extracts on Wound Healing: Preliminary Report of Factors Responsible. R. S. Hoffman, J. A. Dingwall and W. DeW. Andrus.—p. 1125.
Primary Closure of Bedsores by Plastic Surgery. J. C. White and W. G. Hamm.—p. 1136.
Primary Closure of Decubitus Ulcers. J. H. Gibbon Jr. and L. W. Freeman.—p. 1148.
Studies on Nutrition: Effect of Preoperative Force Feeding on Surgical Patients. C. E. Koop, J. H. Drew, Cecilia Riegel and J. E. Rhoads.—p. 1165.

Tetanus a Preventable Disease.—According to Glenn the protection of the American soldier against tetanus by active immunization with tetanus toxoid during World War II is one of the most successful projects yet demonstrated in the field of preventive medicine. The high incidence of the disease among the civilian casualties in the battle for Manila (1945) is evidence that danger exists for the unimmunized. Present day mortality rates indicate that the disease is best controlled by prevention rather than treatment of a curative nature. Immunization of all school children with tetanus toxoid should result in a decrease in the number of deaths that occur each year from the disease.

Composite Free Grafts of Skin and Cartilage.—Brown and Cannon direct attention to a type of free graft from the ear, consisting of two surfaces of skin and intervening cartilage. They present drawings of operative procedures and illustrations of clinical results in restorations of the border of the nose and the columella.

Effects of Animal Tissue Extracts on Wound Healing.—Hoffman and his associates present experimental and clinical evidence which indicates that there is an active growth promoting factor present in adult sheep heart extract. A method is presented whereby adult sheep heart extract may be prepared in large quantities and thus be available for clinical use and experimental study. This extract appears to exert a stimulating effect on indolent human wounds and a lesser effect on wounds of normal healthy persons. The active factor appears to be a protein having many characteristics of an enzyme.

Archives of Dermatology and Syphilology, Chicago

54:637-796 (Dec.) 1946

*Dermatitis Venenata Resulting from Contact with Marine Animals (Hydroids): Report of Cases. G. A. De Oreo.—p. 637.
Vehicles in Topical Dermatologic Therapy: Their Functions and Physicochemical Characteristics. C. G. Lane and I. H. Blank.—p. 650.
Angiomas of Scrotum (Angiokeratoma, Fordyce): Compilation of Cases and Discussion of Nomenclature. S. S. Robinson and S. Tasker.—p. 667.
*"Fixed" Eruption of Mucous Membrane and Skin Caused by Sulfadiazine. L. M. Cole.—p. 675.
Circumscribed Neurodermatitis (Lichen Chronicus Simplex): Its Treatment by Injections of Alcohol. I. R. Pels and F. A. Ellis.—p. 677.
*Atopic Dermatitis of Hands Due to Food Allergy. A. H. Rowe.—p. 683.
*Antibacterial Potency of Penicillin Sodium to Beta Hemolytic Staphylococcus Aureus in Water Soluble Bases and Glycerinated Aqueous Solution Under Varied Storage Conditions. M. J. Pelczar and S. W. Barefoot.—p. 704.
Use of Pressure Bandages in Treatment of Pemphigus: Report of Case. Kathleen A. Riley.—p. 711.

Dermatitis Venenata from Marine Animal Contact.—De Oreo reviews observations on 52 cases which indicate that dermatitis can be produced by contact with the small marine animal of the genus Halecium. The reactions are for the most part local in character but occasionally may be generalized and accompanied with moderate systemic reactions, the latter resulting possibly from former sensitization.

"Fixed" Eruption Caused by Sulfadiazine.—According to Cole the commonest reactions to sulfadiazine are macular eruptions, febrile reactions and conjunctivitis, whereas "fixed drug" eruptions are rare. The author describes 3 cases in which both phenomena existed: fixed eruptions of the mucous membrane and the skin caused by sulfadiazine therapy.

Atopic Dermatitis of Hands Due to Food Allergy.—Rowe thinks that "eczematoid" dermatitis of the hands may be due to atopic allergy to food more frequently than has been realized. This opinion is based on the control and reproduction of dermatitis of the hands by the elimination and later by the reintroduction of allergenic foods into the diet of 80 patients in a series of 182 patients with dermatitis of the hands seen in private practice of allergy. Atopic dermatitis of the hands due to allergy to inhaled pollen as a major or secondary cause also occurred in 22 of these patients. Irritations of the skin of the hands from housework especially and also from other occupations and avocations help to activate a potential sensitization to food in the skin.

Potency of Penicillin Under Various Storage Conditions Against Hemolytic Staphylococci.—Pelczar and Barefoot stress that all penicillin preparations should be kept at refrigerator temperature. Aqueous solutions of penicillin should be prepared fresh at least every three days, regardless of the type of storage. When kept at refrigerator temperature, penicillin in the water soluble bases tested retains sufficient antibacterial activity to be effective after one month. At room temperature the decrease in potency after two weeks is sufficient to render the preparations ineffective therapeutically. It appears that in the case of highly porous water soluble bases the rate of destruction of the antibacterial activity of penicillin is slightly greater near the surface than at the bottom of the container when storage is at room temperature.

Archives of Neurology and Psychiatry, Chicago

56:609-756 (Dec.) 1946

Histopathology of Polioencephalitis Hemorrhagica Superior (Wernicke's Disease). F. W. Bailey.—p. 609.
Capillaries in Finger Nail Fold in Patients with Neurosis, Epilepsy and Migraine. A. Hauptmann.—p. 631.
Capillaries of Nail Fold in Patients with Neurocirculatory Asthenia (Effort Syndrome, Anxiety Neurosis). S. Cobb, M. E. Cohen and D. W. Badal.—p. 643.
*Electromyography in Differential Diagnosis of Ruptured Cervical Disk. Mary A. B. Brazier, A. L. Watkins and J. J. Michelsen.—p. 651.
Delirium: IV. Quantitative Electroencephalographic Study of Case of Acute Arsenical Encephalopathy. G. L. Engel, J. Romano and L. Goldman.—p. 659.
Chronic Psychoses and Addiction to Morphine. A. Z. Pfeffer and Dorothy Cleck Ruble.—p. 665.
Bromine Content of Blood in Mental Diseases: II. Manic-Depressive Psychosis. Helen L. Wikoff, T. Marvin and R. L. Martin.—p. 673.
*Cerebral Dysrhythmia and Psychopathic Personalities: Study of 96 Consecutive Cases in Military Hospital. B. Simon, J. L. O'Leary and J. J. Ryan.—p. 677.
Flexible Electrode-Carrying Headgear for Electroencephalographic Examination. A. R. McIntyre and A. L. Dunn.—p. 686.
Clip-On Electrode for Use in Electroencephalography. D. L. Nixon. —p. 691.

Electromyography in Differential Diagnosis of Ruptured Cervical Disk.—Brazier and her associates state that the electromyograph can be used as a delicate tool for the detection of fasciculations in muscles not obvious to the eye. In the present study 10 cases of suspected compression of nerve roots by protruding intervertebral disks have been reviewed in the light of their electromyographic findings. In 9 of these 10 cases operation was performed, and therefore confirmation of the segmental involvement was furnished by operative observation, the other case having confirmation by myelographic studies. In 2 cases of suspected ruptured disk with normal electromyograms no lesion of the disk was observed at operation. The electromyographic findings in these cases are also compared with those in cases of anterior horn cell disease in progressive muscular atrophy.

Cerebral Dysrhythmia and Psychopathic Personalities.—Simon and his associates obtained electroencephalographic tracings from 96 of a series of 104 patients with a disorder diagnosed as constitutional psychopathic state in a military setting. The personalities were evaluated first by psychiatric criteria, so that the finding of electroencephalographic abnormality did not influence diagnostic judgment. The percentage of abnormal records did not greatly exceed the reported incidence of abnormality in normal control groups although there was a higher percentage of records with F-2 and S-2 frequencies than has been obtained for normal controls. The authors find no relationship between the severity of manifestations of psychopathy and the incidence of abnormality in records.

Archives of Pathology, Chicago

42:459-556 (Nov.) 1946

*Sudden and Unexpected Deaths of Young Soldiers: Diseases Responsible for Such Deaths During World War II. A. R. Moritz and N. Zamcheck.—p. 459.
Cardioaortitis: Report of Case. N. Dungal.—p. 495.
Distribution of Alkaline Phosphatase in Human Liver: Study of Postmortem Material. M. Wachstein and F. G. Zak.—p. 501.
Granular Cell Myoblastoma. Elizabeth B. Powell.—p. 517.
Toxicology of 1,2-Dichloropropane (Propylene Dichloride): III. Pathologic Changes Produced by Short Series of Daily Exposures. B. Highman and L. A. Heppel.—p. 525.
*Fibrinogen Plastics: Tissue Reactions Induced by a Series of Fibrinogen Plastics Implanted in Abdominal Wall of Guinea Pigs. O. T. Bailey and R. Ford.—p. 535.

Sudden and Unexpected Deaths of Young Soldiers.—Moritz and Zamcheck say that survey of the postmortem material at the Army Institute of Pathology revealed that the most common diseases responsible for rapid, unexpected death among soldiers were heart disease, intracranial hemorrhage and meningococcemia. Of the many miscellaneous diseases also recorded, pneumonia occurred most frequently. In addition there was a group of deaths for which no cause could be established. The most common form of heart disease responsible for sudden death was severe coronary arteriosclerosis with or without demonstrable thrombosis. Rupture of an aneurysm of the circle of Willis was the most common cause of rapidly fatal intracranial hemorrhage. Degeneration of and hemorrhage into the adrenal cortex were regarded as important contributing causes of rapid collapse and early death incident to meningococcemia.

Tissue Reactions Induced by Fibrinogen Plastics.—According to Bailey and Ford several of the plasma proteins, notably fibrinogen, may be made into plastic materials. Studies were made to determine the tissue reactions elicited by a group of these plastics in the abdominal wall of guinea pigs. On the whole, the tissue reactions were relatively slight. The tissue reactions were affected by the nature of the substrate and of the plasticizer; they were much less affected by the concentration of the substrate and by the time of heating.

Archives of Pediatrics, New York

63:559-616 (Nov.) 1946

*Influenzal Meningitis Treated with Streptomycin: Report of 3 Cases with Recoveries. A. L. Hoyne, R. H. Brown and A. P. Drucker. —p. 559.
*Role of Water in Etiology of Poliomyelitis. R. R. Scobey.—p. 567.
Appetite, Hunger and Obesity in Youngsters Past Age 12: Deductions Derived from Over 1,000 Cases. I. Bram.—p. 581.
*Hodgkin's Disease in Infancy and Childhood: Report of Case. H. S. Wright Jr.—p. 586.

Influenzal Meningitis Treated with Streptomycin.—Hoyne and his associates report 3 cases of acute purulent meningitis due to Hemophilus influenzae type B in 2 boys aged 3 years and 13 months respectively and in 1 girl 9½ years old. The patients were treated successfully with combined Alexander's anti-influenzal type B rabbit serum, sulfonamide drugs and streptomycin. A standard recommended dose of 25 mg. of streptomycin was used intrathecally and 3 mg. per pound of body weight was injected intramuscularly every three hours. The largest total dosage of streptomycin used for any of the 3 patients was 75 mg. intrathecally and 5,700 mg. intramuscularly (total 5,775 mg.). The short duration of streptomycin therapy (ninety hours) and the infrequency of intrathecal streptomycin in these cases is in sharp contrast to the usual method reported in the literature. It is suggested that streptomycin may be of great value intramuscularly even when administered late in the course of the disease, at a time when intrathecal injection may not be required. Good results may be obtained without intrathecal therapy if adequate amounts of streptomycin are administered intramuscularly.

Water in Etiology of Poliomyelitis.—Scobey noted that the potential hydrocyanic acid content of plants that people commonly consume was increased during droughts when poliomyelitis is prevalent and that this poison is capable of producing symptoms and pathologic lesions such as those observed in this disease. While water is not technically classed as a food, it is an essential article of diet which also contains a relatively high percentage of hydrocyanic acid under the same conditions. Rain water, which may be considered a pure water, soon becomes surface water which quickly passes into the ground. The soil contains a high concentration of vegetable matter rich in cyanophore glucosides which may be hydrolysed in the soil to produce hydrocyanic acid or salts. A heavy rainfall during a long continued dry spell may actually carry vegetable matter made more potent by drought to the ground water and to wells, springs and larger bodies of water, there to be concentrated by natural evaporation. Organic matter growing in and on the banks of rivers and their tributaries also increases that which was received from the soil, near and far, through the ground water. Garbage may increase the organic content in some of the streams of the country. Fish and other forms of animal life probably furnish enzymes to hydrolyse the hydrocyanic acid-producing glucosides. The spread of poliomyelitis appears to follow waterways in many instances. It is suggested that the spring and fall overturns in bodies of water throughout the country would account, in part, for the appearance of poliomyelitis in the spring before vegetables and fruits have ripened adequately for human consumption and the high incidence of the disease in the fall when most of the harvest has been completed. It would also explain the sudden termination of epidemics of poliomyelitis with cold weather.

Hodgkin's Disease in Children.—Wright reports the occurrence of Hodgkin's disease in a boy aged 5 with large posterior auricular and cervical lymph nodes and a few discrete nodules varying in size on the right side of the neck, and with a more matted group, but not as prominent, on the left side. Nine months before admission there had been observed a small swelling behind the left ear attributed to tonsillar disturbance. Then came a severe attack of pertussis with constant progressive enlargement of the cervical glands. There was no history of loss of appetite or weight. The temperature during the child's six day stay at the hospital spiked to 101-102 F. daily. The blood count showed 4,270,000 red blood corpuscles and 7,800 white blood corpuscles, with 39 per cent mature and 8 per cent immature neutrophils and lymphocytes 53 per cent. Treatment consisted in intramuscular administration of 5 cc. of azosulfamide (prontosil) daily, intramuscular administration of 1 cc. of liver extract daily and oil bathing. Symptomatic therapy seems to be all that one has at present to combat the disease.

Archives of Surgery, Chicago

53:603-712 (Dec.) 1946

*Pathology and Physiology of Struma Ovarii. F. G. Smith.—p. 603.
*Surgical Treatment of Neoplastic Obstruction of Extrahepatic Biliary Tract. G. A. Stevens.—p. 627.
Hemodilution Following Experimental Hemorrhage: Influence of Body Movement, of Ingestion of Water and of Anesthesia Induced by Intravenous Administration of Pentothal Sodium. R. Elman and H. Riedel. —p. 635.
*Traumatic and Amputation Neuromas. A. K. Cieslak and A. P. Stout. —p. 646.
Air in Biliary Passages: Review and Report of Case. D. C. Donald, B. T. Meadows and S. J. Silbermann.—p. 652.
Arrest of Growth of Epiphyses. J. T. Hodgen and C. H. Frantz. —p. 664.
Spondylolisthesis: Additional Variations in Anomalies in Pars Interarticularis. M. B. Roche and C. S. Bryan.—p. 675.
High Protein Therapy: Clinical Effectiveness of Oral Administration of New Protein Preparation as Determined by Nitrogen Balance Studies. D. D. Kozoll, W. S. Hoffman, K. A. Meyer and Thelma Garvin. —p. 683.
Localized Proximal Jejunitis. A. S. Lyons and J. H. Garlock.—p. 702.

Pathology and Physiology of Struma Ovarii.—Smith reports a case of struma ovarii and analysis of 152 previously published reports. The tumor of a woman aged 58 consisted of thyroid tissue in various grades of differentiation, with malignant invasion of the blood vessels; several foci of osseous formation were observed. The iodine content of the tumor was 2.4 mg. per hundred grams of wet weight. There was evidence of a mild thyrotoxicosis which is attributed to the coexistence of a nodular goiter. Tumors of the ovary containing thyroid are of three general varieties: dermoids with thyroid, 50 per cent; cystoma with thyroid, 31 per cent, and pure thyroid, 17 per cent. Thyroid tissue has also been observed in association with chorionic carcinoma of the ovary and with a Brenner tumor. Coexisting tumors of the opposite ovary are not infrequent. Struma ovarii reproduces the architecture of the thyroid gland. Physiologic activity of these tumors is demonstrated by the presence of iodine in approximately half of the tumors investigated, by the presence of thyroid hormone as determined by the tadpole test, and in a few instances by clinical symptoms of thyrotoxicosis relieved by the removal of the tumor.

Surgical Treatment of Neoplastic Obstruction of Biliary Tract.—Stevens believes that the scope of surgical procedures applicable to the treatment of obstructive neoplasms of the extrahepatic biliary tract is limited. For all practical purposes individualization of treatment is confined to four methods: (1) local excision, (2) transduodenal resection of the ampulla of Vater, (3) a Whipple type of procedure and (4) palliative shunting of the bile flow. Four cases are reported which illustrate the indications for each of these procedures. Four modifications of the Whipple operation are submitted. Sparing a small portion of the tail of the pancreas has prevented postoperative diabetes, whereas total pancreatectomy has consistently been followed by diabetes. It is therefore important to leave some pancreatic tissue intact whenever practical.

Traumatic and Amputation Neuromas.—Cieslak and Stout review cases of traumatic neuromas from the records of the Presbyterian Hospital, New York. The commonest causes of neuromas of this type are either failure of the examining physician to recognize a nerve injury or a poor reparative procedure. In eighty-six amputations done at the Presbyterian Hospital only three neuromas occurred. The neuroma seems to be associated with infection or inclusion of the nerve in scar tissue. The best method of prevention seems to be ligation and section of the nerve as high as possible above the level of amputation, so that the nerve end is embedded in soft tissue and not in dense scar tissue.

Arizona Medicine, Phoenix

5:333-404 (Nov.) 1946

Nonmedicinal Aids in Treatment of Bronchial Asthma. D. Carr, W. E. Denman and E. F. Skinner.—p. 357.
Cancer Problems of Today. E. P. Palmer.—p. 359.
*Contact Lenses. P. H. Case.—p. 369.
Syphilis Serology as Affected by Zeolitic Base Exchange. E. L. Breazeale, T R Reusser and L. F. Pierce.—p. 371.

Contact Lenses.—Case shows that the individual molding technic and the replacement of ordinary glass contact lenses by plastic contact lenses represent recent advancements. Contact lenses may be used not only to correct errors of refraction but also as a protective device for the eye against undesirable fluids, gases or solids; as such, they are becoming more and more popular for protection in industrial plants. These lenses are also useful as a mechanical aid in some corneal diseases. Contact lenses are used to keep penicillin solution in constant contact with the ulcer. In cases of keratoconus the vision of the eye is poor with an ordinary lens but is quite good with contact lenses. These lenses are a great help to actors, aviators, chemists, dancers, swimmers and divers, lecturers, microscopists, engineers, musicians, surgeons and athletes. At first the wearing time of contact lenses will be only an hour or two, but as the patient adjusts to the lenses four to five hours is the usual wearing time, after which the buffer solution usually needs to be changed.

Arkansas Medical Society Journal, Fort Smith

43:123-138 (Nov.) 1946

Physician's Responsibility in Venereal Disease Control. D. W. Goldstein.—p. 123.
Powdered Penicillin: Its Surgical Uses and Advantages. G. O. Dean. —p. 129.

43:139-186 (Dec.) 1946

Arkansas Physician and Workmen's Compensation Act: Workmen's Compensation Commission. D. Peel.—p. 144.
Report of Industrial Health Committee. A. D. Cathey.—p. 166.

Bulletin of Johns Hopkins Hospital, Baltimore

79:333-364 (Nov.) 1946

*Sarcoidosis Simulating Glomerulonephritis. H. F. Klinefelter Jr. and S. M. Salley.—p. 333.
*Sulfonamide Sensitivity Determinations of Hemolytic Streptococci Isolated from Patients Before and After Treatment with Sulfadiazine. T. L. Hartman.—p. 342.
*Pathologic Findings in Fatal Case of Disseminated Granuloma Inguinale with Miliary Bone and Joint Involvement. J. Lyford III, R. W. Johnson Jr., S. Blackman and R. B. Scott.—p. 349.

Sarcoidosis Simulating Glomerulonephritis.—According to Klinefelter and Salley it is now recognized that sarcoidosis is a generalized granulomatous disease and that the skin lesions are only a minor and inconstant manifestation. Renal involvement accompanied by extensive retinal changes is so unusual in sarcoidosis that the authors report a case of this type in detail. Three other cases of sarcoidosis with renal insufficiency are reviewed and the findings in the 4 cases are tabulated. There is evidence that all were cases of generalized sarcoidosis. These 4 cases are quite similar, with relatively long benign course, minimal urinary findings with azotemia, anemia and usually normal blood pressure. The retention of nonprotein nitrogen with anemia seems out of proportion to the clinical evidence of renal disease. It seems probable that the renal insufficiency in sarcoidosis is the result of invasion of the kidneys by sarcoid granulomas. Extensive retinal changes occur in sarcoidosis, with or without renal involvement, and the retinitis does not result from the renal damage. While the diagnosis of sarcoidosis can be made with certainty only on finding the typical microscopic pathologic structure, the disease should be suspected when hyperglobulinemia and hypercalcemia are found in the presence of azotemia. Multiple myeloma is the only other disease which may cause this unusual blood chemical abnormality.

Sulfonamide Sensitivity of Streptococci After Treatment with Sulfadiazine.—Hemolytic streptococci isolated from the nasopharynx of 40 patients before and after sulfadiazine therapy were tested by Hartman for resistance to the action of sulfadiazine. None of the hemolytic streptococci isolated following a course of sulfadiazine therapy showed evidence of the development of resistance to sulfadiazine.

Disseminated Venereal Granuloma.—A young Negro woman died ten months after the appearance of the original genital lesion and eight months after the onset of the systemic manifestations. Donovan bodies were grown in continuous tissue cultures of material taken by biopsy from affected bones and joints, as well as being demonstrated in the tissues on microscopic examination. The necropsy, described by Lyford and his associates, further demonstrated that granuloma inguinale is a general systemic disease which involves the bones, joints, soft tissues and internal organs and can terminate fatally.

Bulletin of Los Angeles Neurological Society

11:1-96 (March-June) 1946. Partial Index

*Acute Porphyria: Report of Fatal Case with Severe Neurologic Manifestations Encountered in Southwest Pacific. K. H. Abbott and H. S. Evans.—p. 20.
Notes on Pathology of Cranial Tumors: III. Embryonal Neoplasms—Lipomas, Dermoids, Epidermoids (Cholesteatomas) and Chordomas. C. B. Courville.—p. 32.
Spondylitis Rhizomyelique with Extensive Neurologic Manifestations: Report of Case. E. D. Fisher.—p. 52.
Circumscribed Spinal Arachnoiditis with Cavitation of Spinal Cord: Report of Case. P. J. Vogel.—p. 58.
Cerebral Abscess as Complication of Meningomyelocele: Report of 2 Cases. C. Marsh.—p. 63.
Bullet Wound of Cervical Part of Spinal Cord: Report of Case of Successful Removal of Bullet with Partial Functional Return. K. H. Abbott.—p. 72.
*Coccidioidal Brain Abscess. A. E. Rhoden.—p. 80.

Fatal Case of Acute Porphyria.—A corporal aged 22, who came under the observation of Abbott and Evans in the South Pacific Area, complained of pains and cramps in the abdomen, mostly involving the right upper quadrant. He gave a history of previous attacks of abdominal pain with remissions and exacerbations. He had paralysis of the muscles of the upper extremity and paresis of the lower extremity, and there was respiratory embarrassment. Porphyrins were demonstrated in the urine. Death followed a series of generalized convulsions. Microscopic studies revealed a tendency to patchy degeneration of the myelinated fibers of the nerve roots and of the white matter of the spinal cord, a more selective degeneration of the central white fibers which pass through the gray matter, the occurrence of petechial hemorrhages and areas of focal necrosis in the pons, and an advanced degree of chromatolysis in cells of the dentate nucleus as well as cerebellar and cerebral cortex. Toxic changes were found in the liver and spleen. The authors suggest that treatment should be directed toward protecting the liver against the toxic factor causing this damage.

Coccidioidal Brain Abscess.—Rhoden describes what he regards as the first case of coccidioidal brain abscess to be reported in the literature. The abscess had almost replaced the tissues of the left cerebellar hemisphere and caused compression of the fourth ventricle and terminal meningitis. The clinical course was insidious and asymptomatic up to the final stage, when mounting intracranial pressure and meningitis became manifest. The lesion occurred in a 16 year old white boy who had lived in the endemic area for about three years and had severe diabetes mellitus.

Cincinnati Journal of Medicine

27:857-922 (Dec.) 1946

Life Situations, Emotions and Nasal Disease: Changes in Nasal Function Associated with Varying Emotional States and Life Situations. H. G. Wolff, T. H. Holmes, Helen Goodell and S. Wolf.—p. 857.
Nutrition in Germany. W. F. Ashe.—p. 860.
Meningitis in the Newborn. W. P. Mulvaney.—p. 866.
Pattern of Injuries Produced by Atomic Bombs at Hiroshima and Nagasaki. S. Warren and R. H. Draeger.—p. 871.

Endocrinology, Springfield, Ill.

39:281-360 (Nov.) 1946

Comparison of Spermatogenic and Androgenic Properties of Testosterone Propionate with Those of Pituitary ICSH (Interstitial Cell Stimulating Hormone) in Hypophysectomized 40 Day Old Male Rats. Miriam E. Simpson and H. M. Evans.—p. 281.
Absence of Renotropic Effects on Administration of Pure Adrenocorticotropic Hormone (ACTH). Miriam E. Simpson, C. H. Li and H. M. Evans.—p. 286.
Inactivation of α-Estradiol by Inbred Rats. A. Segaloff and Wilhelmina F. Dunning.— p. 289.
Adrenal Cortex and Lymphocytopenia Due to Glucose Administration. F. Elmadjian, H. Freeman and G. Pincus.—p. 293.
Effect of Thiouracil on Succinoxidase and Cytochrome Oxidase of Rat Liver. S. R. Tipton and W. L. Nixon.—p. 300.
Effects of Various Hormonal Conditions in Intact Rat on Synthesis of Serum Cholinesterase. C. H. Sawyer and J. W. Everett.—p. 307.
Effects of Castration and Treatment with Sex Steroids on Synthesis of Serum Cholinesterase in Rat. J. W. Everett and C. H. Sawyer. —p. 323.
Further Observations on Rabbit Method of Insulin Assay. A. H. Lacey. —p. 344.

Illinois Medical Journal, Chicago

90:249-300 (Nov.) 1946

Modern Treatment of Heart Disease an Indicator of Changing Trends of Medical Practice. H. C. Lueth.—p. 258.
Preliminary Results with New Fenestration Technic. G. Shambaugh Jr. —p. 264.
New Applications of Laboratory Methods in Diagnosis of Tuberculosis. H. C. Sweany.—p. 268.
Surgical Principles in Strabismus. W. W. Gailey and G. E. Morgan. —p. 275.
Child Psychiatry and Practice of Medicine. H. A. Greenberg.—p. 279.
Anemia in Pregnancy—Clinical Management. J. R. Wolff.—p. 282.
Minimal Pulmonary Shadows and Their Management. A. S. Webb. —p. 285.
Effect of Various Types of Therapy in Management of Irritable Bowel Syndrome. R. E. Dolkart, Mame Dentler and L. L. Barrow.—p. 287.
Psychiatry in Illinois State Training School for Boys. J. R. Marx. —p. 290.

Indiana State Medical Assn. Journal, Indianapolis

39:625-696 (Dec.) 1946

Differential Diagnosis of Acute Abdomen. P. Thorek.—p. 625.
Penicillin in Treatment of Subacute Bacterial Endocarditis. G. W. Irwin.—p. 630.
*Postoperative Abdominal Adhesions and Common Errors Causing Them. W. L. Green.—p. 634.
Limitations of Chest X-Ray Interpretations. B. W. Stocking.—p. 636.
Erythroderma Desquamativa (Leiner's Disease). H. E. Stadler and B. K. Byrne.—p. 638.
Sarcomas of Uterus. J. W. Hofmann.—p. 640.

Postoperative Abdominal Adhesions.—Green stresses the need for more thorough understanding of the underlying causes of postoperative adhesions. He enumerates some of the common errors in surgical technic which lead to their formation, such as use of gloves from which abrasive talcum powder has not been washed, use of hot moist packs in the abdomen along with the steep Trendelenburg position, use of skin edge towels along with various types of clamps and self-retaining retractors, failure to recognize suture material as a cause of local peritonitis, placing of foreign materials, such as glucose or amniotic fluid, in the abdomen, and keeping patients in bed too long after operation.

Journal of Clinical Endocrinology, Springfield, Ill.

6:655-706 (Oct.) 1946

Source of Excess Creatine Following Methyl Testosterone. L. T. Samuels, Dorothy M. Sellers and C. J. McCaulay.—p. 655.
Evaluation of Guterman Pregnancy Test in Clinical Practice. H. L. Reinhart and A. C. Barnes.—p. 664.
Relationship Between Blood Sugar and Lymphocyte Levels in Normal Individuals. H. Freeman and F. Elmadjian.—p. 668.
*Further Studies on Control of Menorrhagia. R. B. Greenblatt and H. S. Kupperman.—p. 675.
*Pheochromocytoma of Adrenal Medulla: Its Role in Pathogenesis of Malignant Hypertension. E. L. Washington, W. P. Callahan Jr. and E. W. Edwards.—p. 688.

Control of Menorrhagia.—The studies reported by Greenblatt and Kupperman extended over several years and represent an analysis of cases of functional uterine bleeding treated by various methods utilizing steroid hormones. They found that the administration of 25 mg. of testosterone propionate and 10 mg. of progesterone daily during a four to five day period results in a rapid cessation of bleeding, which after an interval of four or five days is followed by a short bout of withdrawal bleeding. This method of therapy has thus far proved the most promising in the management of menorrhagia.

Pheochromocytoma of Adrenal Medulla in Pathogenesis of Malignant Hypertension.—In the case of pheochromocytoma of the adrenal medulla presented by Washington and his associates the onset was typical, consisting of attacks of vomiting, headache, flushing of the face, blurring of vision and paroxysmal hypertension. The hypertension subsequently became permanent. The patient, a man aged 26, died shortly after attempted removal of the tumor without clinical evidence of uremia. Unusual features were a widespread necrosis of the arterioles and associated hemorrhages without evidence of uremia, and malignant transformation in the tumor characterized by invasion of the right adrenal vein and of the inferior vena cava. An epinephrine-like substance was demonstrated in the tumor. It is assumed that the prolonged discharge of vasopressor substance from the tumor may produce changes in the arterioles which result in permanent hypertension. The continued release of this substance after the development of a permanent elevation of the blood pressure may be responsible for the production of arteriolar necrosis and hemorrhages without the presence of uremia.

Journal of Lab. and Clinical Medicine, St. Louis

31:1279-1408 (Dec.) 1946

*Cellular Mechanism of Recovery After Treatment with Penicillin: I. Subacute Bacterial Endocarditis. R. A. Moore.—p. 1279.
*Effectiveness of Conjugated Forms of Folic Acid in Treatment of Tropical Sprue. R. M. Suárez, A. D. Welch, R. W. Heinle and others.—p. 1294.
Sulfacarboxythiazole: Absorption, Excretion, Toxicity and Therapeutic Results in Bacillary Dysentery and Nonspecific Diarrhea. H. L. Hirsh, T. L. Hickman, L. K. Sweet and H. F. Dowling.—p. 1305.
Concentration of Streptomycin in Dog Bile. M. Gutmann, R. Trockmand and A. C. Ivy.—p. 1313.
Cutaneous Test with Coccidioidin: Review of Literature and Report of Series in Texas. D. M. Haynes and W. I. Hess.—p. 1317.
Method of Assaying Steroids and Adrenal Extracts for Protective Action Against Toxic Material (Typhoid Vaccine). Lena A. Lewis and I. H. Page.—p. 1325.
Tridione: New Anticonvulsant Drug. R. K. Richards and G. M. Everett.—p. 1330.
Acute and Chronic Toxicity Studies on Theophylline Aminoisobutanol and Theophylline Ethylenediamine. C. R. Thompson and M. R. Warren.—p. 1337.
Studies on Plasma Concentration and Tissue Distribution of Sodium Pentothal (Sodium Ethyl [1-Methylbutyl] Thiobarbiturate). J. W. Jailer and L. R. Goldbaum.—p. 1344.
Pyribenzamine in Hay Fever and Other Allergic Disorders. A. S. Friedlaender and S. Friedlaender.—p. 1350.

Cellular Recovery After Penicillin Treatment.—Moore studied tissues of patients who were treated with penicillin and who subsequently died of the primary disease or of a complication. A comparison was made of the lesions of the heart in subacute bacterial endocarditis in 22 patients treated with penicillin and in 8 patients not given specific therapy. Penicillin promotes healing in subacute bacterial endocarditis, but the basic processes of healing are not modified. These processes are covering of the exposed surface of the vegetation with fibrous tissue, invasion of the layer of colonies and phagocytosis of bacteria, calcification of bacterial colonies, hyalination and calcification of the central core of the vegetation, and endothelization of the spaces and clefts in the vegetation. Healing in some patients is accompanied with excessive calcification, and the result is a calcific stenosis of the valve. The vegetative lesions of subacute bacterial endocarditis consist of two parts, a nonbacterial (rheumatic or thrombotic) primary part and a bacterial secondary part.

Conjugated Forms of Folic Acid in Tropical Sprue.—According to Suárez and his associates folic acid (pteroylglutamic acid) occurs naturally not only as a free vitamin but also in the form of various complexes or conjugates. Two of these complexes, both polyglutamates, have been isolated in pure form, one from yeast and one from a filtrate obtained from an aerobic fermentation of a diphtheroid type organism. The folic acid complex of yeast, often termed vitamin B_c conjugate, was identified as pteroylhexaglutamylglutamic acid. The other naturally occurring complex, which is usually termed fermentation folic acid or fermentation Lactobacillus casei factor, was shown to be a triglutamate (pteroyldiglutamylglutamic acid). Following the parenteral administration of fermentation folic acid in a dose equivalent to 3.1 mg. of pteroylglutamic acid daily, the clinical and hematologic manifestations of sprue were improved in a patient previously treated with liver extracts. Administration of the conjugate caused the elimination in the urine of free folic acid in an amount indicating that a large proportion of the conjugate was converted in vivo to the free vitamin, although the amounts excreted during the first three days of therapy suggested that greater retention occurred when the need was greatest. When purified liver extract free of folic acid was administered in addition to fermentation folic acid a remarkable increase in the urinary excretion of free folic acid occurred, a circumstance which suggests that the erythrocyte maturation factor may be concerned with the release of stored complexes of folic acid or that in some other manner it affects the metabolism of folic acid. Oral administration of a concentrate of vitamin B_c conjugate of yeast in daily doses equivalent to 8.4 mg. of free pteroylglutamic (folic) acid caused rapid clinical improvement in a patient with sprue given no previous treatment with liver extracts, yeast or vitamins. Urinary studies showed at first only small augmentations in the excretion of the free vitamin, although the amount gradually increased. Whether the small amounts excreted are indicative of utilization of the conjugate as such or whether they suggest an unusually strong retention of free folic acid released from the conjugate cannot be determined at present. Poor absorption is unlikely in view of the prompt and striking clinical and hematologic improvement. Following the administration of purified liver extract (free of folic acid) in addition to the conjugated vitamin the daily urinary elimination of folic acid was increased. This suggests that augmentation of the urinary elimination of free folic acid resulted from an effect of a component of purified extracts of liver on the metabolism of this naturally occurring complex of folic acid or on tissue complexes stored as a result of treatment with the conjugate.

Journal of Nervous and Mental Disease, New York

104:583-732 (Dec.) 1946

*Study of Electroencephalographic Findings in 209 Cases Admitted as Head Injuries to Army Neurological-Neurosurgical Center. M. W. Laufer and R. F. Perkins.—p. 583.
*Preliminary Study on Use of Methedrine in Psychiatric Diagnosis. J. L. Simon and H. Taube.—p. 593.
Unilateral Hoffmann Reflex (Clinical Note). J. M. Schneck.—p. 597.
Acute Encephalomeningomyelitis with Spastic Paraplegia in Young Boy. A. Briskier.—p. 599.
*Grammar-Rhetoric Indicator. A. N. Mayers and Elisabeth B. Mayers.—p. 604.
Group Psychotherapy on Modified Analytic Basis. C. N. Sarlin and M. A. Berezin.—p. 611.

Electroencephalographic Observations in Head Injuries.—Laufer and Perkins give the electroencephalographic findings in 209 cases of head injury treated at an army neurologic-neurosurgical center. Electroencephalographic abnormalities are apparently indicative of brain injury. The percentage of electroencephalographic abnormality increases with the severity of injury. It is greatest when the dura has been penetrated. The percentage of electroencephalographic abnormality decreases as time elapses from injury. Amplitude asymmetry is a guide to the site of injury and an index of electroencephalographic improvement. Focal records were not found in mild injuries but did occur with severe injury and penetrating wounds. Focal records without convulsions were found almost entirely when the injury had been received less than six months before the initial electroencephalogram. Focal records with convulsions occurred longer than six months after injury. This suggests the possibility that posttraumatic epilepsy, though initially asymptomatic, may eventually develop in cases with focal records.

Methedrine in Psychiatric Diagnosis.—Simon and Taube found that all patients became more talkative when 15 to 20 mg. of methedrine was administered intravenously. Some disclosed previously unobtainable material. In several cases emotional outbursts occurred. In 1 instance paranoid delusions were released. It is suggested that methedrine may have a place in the armamentarium of psychiatric diagnostic methods.

Grammar-Rhetoric Indicator.—The Mayerses show that their "dynamic concept test" affords an opportunity for "grammar-rhetoric indicator" analysis. Their dynamic concept test is a standardized form of play technic in which five stories are asked for: (1) a story about a child of 5 or under, (2) a story about an ideal family, (3) a story about best friends, (4) a romantic story and (5) a story about a hero. The topics of the stories were chosen because of their conflict content. The authors show that the overuse of moods, such as the conditional and interrogative and subjunctive, has a special meaning, as has also the constant use of verbs such as "should," "ought" and "must" and the absence of active verbs. Such findings as the omission of articles and pronouns and the superabundance or scarcity of adjectives have been similarly analyzed. The grammar-rhetoric indicator findings have proved of definite aid in both the understanding and the diagnosis of mental patients.

Journal of Pharmacol. & Exper. Therap., Baltimore

88:323-420 (Dec.) 1946. Partial Index

Inability of Vitamin B Complex as Liver Extract to Protect Kidney Against Toxic Action of Uranium Nitrate. W. D. MacNider.—p. 323.
Studies on DDT (2,2 Bis-Parachloro Phenyl-1,1,1, Trichlorethane): Effects on Oxidative Metabolism. W. F. Riker Jr., Virginia R. Huebner, S. B. Raska and M. Cattell.—p. 327.
Anticonvulsant Activity of Various Nitrogen Heterocycles: I. Alkylthioetherbarbiturates and II. Phenylalkylthiomethylhydantoins. R. L. Cahen. —p. 343.
Pharmacologic Action of Certain Analogues and Derivatives of DDT. M. I. Smith, H. Bauer, E. F. Stohlman and R. D. Lillie.—p. 359.
Effects of Sodium Succinate and Sucrose Diuresis on Pentobarbital Anesthesia. B. De Boer.—p. 366.
Response of Bone Marrow Explants to Liver Extract Preparations. K. E. Armbrust and H. D. Bett.—p. 382.
Influence of Certain Sulfhydryl Compounds on Toxicity of Organic Mercurial Diuretic. W. K. Long and A. Farah.—p. 388.

Laryngoscope, St. Louis

56:639-700 (Nov.) 1946

My Milestones. H. P. Mosher.—p. 639.
Peripheral Facial Paralysis: *Some Aspects of Its Pathology.* T. Cawthorne.—p. 653.
Facial Nerve Surgery in European Theater of Operations. F. D. Lathrop.—p. 665.
Histopathology of Scleroma of Upper Respiratory Tract. R. Mendiola. —p. 677.
Pyribenzamine in Allergic Rhinitis (Preliminary Report). V. Goodhill. —p. 687.
Present Status of Otolaryngology in United States Army. N. Canfield. —p. 693.

56:701-806 (Dec.) 1946

Nutrition *in* Ophthalmology and Otolaryngology. I. H. Jones, H. S. Muckleston, E. R. Lewis, G. R. Owen and L. G. Hunnicutt.—p. 701.
My Milestones. H. P. Mosher.—p. 736.
Effect of Smoking on Caliber of Superficial Blood Vessels in Uvula and Soft Palate. P. H. Holinger, R. G. Rigby, A. H. Andrews Jr., L. H. James and C. W. Lenth.—p. 762.
Tests for Selection of Hearing Aids. R. Carhart.—p. 780.
Voice Changes in Male Adolescents. E. T. Curry.—p. 795.

Medical Annals of District of Columbia, Washington

15:579-646 (Dec.) 1946

Atomic Energy and Your Future Health. G. M. Lyon.—p. 579.
Tumors of Lymphoid Tissues. J. Spier and L. E. Cluff.—p. 588.
Ringworm of Scalp. F. J. Eichenlaub and R. A. Osbourn.—p. 596.
Cancer of Colon. F. A. J. Geier.—p. 601.

Military Surgeon, Washington, D. C.

99:743-838 (Dec.) 1946. Partial Index

Naval Medical Planning. W. J. C. Agnew.—p. 752.
Health Problems in Transition Period. J. A. Crabtree.—p. 754.
Neuropsychiatric Problems of Veterans Administration. P. R. Hawley. —p. 759.
*Atomic Energy and Your Future Health. G. M. Lyon.—p. 762.
Laboratory Diagnosis of Enteric Infections Caused by Salmonella-Shigella Group. R. H. Broh-Kahn.—p. 770.
*1945 Influenza B Epidemic in the Pacific Area. J. H. Milstone, R. B. Lindberg, M. Bayliss and others.—p. 777.
*Tires as Factor in Transportation of Mosquitoes by Ships. J. J. Pratt Jr., R. H. Heterick, J. B. Harrison and L. Haber.—p. 785.

Atomic Energy and Health.—Lyon presents some psychologic problems associated with the atomic bomb. Through facts learned in Operation Crossroads we are now in a position to evaluate more accurately the effects of an atomic explosion. Not only have we been able to study the phenomena of the explosion and to observe their effects on target vessels but we have had actual experience in coping with the dangers which remain after the bomb has exploded.

1945 Influenza B Epidemic in Pacific Area.—Milstone and his associates studied the 1945 epidemic of influenza on the island of Oahu and traced it westward across the Pacific to Okinawa. The epidemic was typical in its epidemiologic, clinical and laboratory aspects. Rapid presumptive identification of the disease was accomplished by comparing the serum titers in a group of acute cases with the titers in a group of convalescent cases. The diagnosis was confirmed by individual serologic tests and by the isolation of influenza B virus. A study was made of the antibody response shown by a group of soldiers who were injected with a standard influenza vaccine. A greater response was observed to the Lee strain of influenza B than to the PR8 strain of influenza A. The flora of the upper respiratory tract of patients varied from that of an uninfected control group principally in showing a threefold increase in incidence of beta hemolytic streptococci.

Transportation of Mosquitoes by Ships.—Pratt and his co-workers say that during the routine Public Health Service quarantine inspection at Los Angeles of a cargo ship from the New Guinea area several live adult mosquitoes were observed in one of the holds of the ship. An investigation revealed that mosquitoes were breeding heavily in fresh water contained in motor vehicle and aircraft tires, which constituted a large part of the cargo. It was estimated that approximately half of the 8,880 tires aboard contained water and that a large proportion of these contained living mosquito larvae. All openings leading into the holds were closed and each hold was thoroughly sprayed with freon-pyrethrum aerosol. Many dead adult mosquitoes were recovered from the holds after the spraying. According to the method instituted of treating tires containing larvae a disinfestation squad was stationed on the dock warehouse loading platform with knapsack sprayers containing 5 per cent DDT in kerosene. As the tires were unloaded onto the platform and rolled into freight cars of box type they were quickly inspected for the presence of water and those found to contain water were sprayed with the DDT. Strict precautions should be taken to prevent the transportation of exotic mosquito species into this country in a viable condition.

Missouri State Medical Assn. Journal, St. Louis

43:815-852 (Dec.) 1946

Tuberculosis. J. A. Myers.—p. 829.
The Pneumonias. R. A. Kinsella.—p. 836.
Chest Tumors. E. A. Graham.—p. 837.
Significant Developments in Field of Suppurative Diseases of Chest. J. L. Mudd.—p. 839.
Significant Developments in Field of Chest Radiology. L. R. Sante. —p. 840.

New England Journal of Medicine, Boston

235:773-810 (Nov. 28) 1946

Diagnostic *and Therapeutic Considerations of Gastrointestinal Bleeding.* C. M. Jones.—p. 773.
*Surgical Aspects of Hemorrhage from Peptic Ulcer. G. J. Heuer. —p. 777.
Roentgenologic Examination in Patients with Bleeding from Gastrointestinal Tract. R. Schatzki.—p. 783.
Outbreak of Influenza in a Boys' School. T. H. Ingalls, J. R. Gallagher and J. F. Enders.—p. 786.
Radiation Treatment of Localized Malignant Lymphoma. G. W. Holmes and M. D. Schulz.—p. 789.
Biochemical Abnormalities During Renal Insufficiency (concluded). S. E. Bradley.—p. 791.
Staphylococcus Aureus Sepsis.—p. 798.
Endometriosis.—p. 801.

Hemorrhage from Peptic Ulcer.—Heuer reviews observations on 337 patients admitted to the hospital because of massive hemorrhage due to peptic ulcer. Twenty-seven died from hemorrhage, 18 of them without operation and 9 following operation performed on 31 patients during bleeding. In the fatal type of hemorrhage the location of the ulcer, if duodenal, is on the posterior duodenal wall and, if gastric, on the lesser curvature. The blood vessels causing the hemorrhage are the pancreaticoduodenal and the right and left gastric arteries or their major branches. To differentiate patients with fatal and nonfatal types of hemorrhage the most consistent criteria are failure to improve promptly under a strict regimen of bed rest, moderate doses of morphine, withholding fluids and food by mouth and adequate blood transfusions and the recurrence of hemorrhage while the patient is on a strict regimen. If operation is decided on it should be done within twenty-four or forty-eight hours of the onset of hemorrhage. Local ligation of the vessels has not permanently controlled hemorrhage. Local excision of the bleeding ulcer and gastric resection, including removal of the ulcer, have given the best results. In patients who recover from hemorrhage on a strict medical regimen the question of recommending surgery or of continuing a medical regimen is vital.

235:811-838 (Dec. 5) 1946

Present Trends in Obstetrics. S. A. Cosgrove.—p. 811.
*Diagnosis and Treatment of Infective Hepatitis. W. C. Moloney.—p. 816.
Some Observations on Recent Food Rationing Program. J. Garland.—p. 820.
Tuberculosis Case Finding. J. A. Foley and J. B. Andosca.—p. 824.
Physiology. H. E. Hoff.—p. 826.
Ependymoma of Filum Terminale.—p. 831.
Cystadenocarcinoma of Left Ovary.—p. 833.

Infective Hepatitis.—Moloney discusses two acute types of hepatitis: epidemic (and sporadic) hepatitis, transmitted in all probability by the intestinal-oral route, and serum hepatitis, transferred parenterally. Although these forms of hepatitis are alike pathologically and clinically, certain differences exist. Since the infective agent has not been isolated, it is not clear whether the disorders are caused by the same or by different etiologic agents. There is no specific therapy for infective hepatitis, but adequate bed rest and proper diet are effective. Acute infective hepatitis is becoming more prevalent in civilian practice. It is probably an antecedent factor in chronic liver damage and cirrhosis more frequently than it is realized. In old and debilitated patients the disease may be fatal.

New Jersey Medical Society Journal, Trenton

43:485-530 (Dec.) 1946

Medicine During World War II. P. H. Long.—p. 488.
Electroencephalogram in Medical Practice. M. M. Stern.—p. 499.
Vaccination by Accident. M. J. Leon.—p. 501.
Systemic Medication by Rectal Suppository. S. Friedenberg.—p. 502.
Rupture of Aorta During Diabetic Acidosis: Report of Case. E. O. Bauman.—p. 503.

New York State Journal of Medicine, New York

46:2575-2686 (Dec. 1) 1946

*Endocrine Factors in Female Sterility, with Special Reference to Question of Hormonal Therapy. I. C. Rubin.—p. 2621.
Recent Advances in Treatment of Epilepsy. H. H. Merritt.—p. 2629.
Effect of Injury and Effort on Normal and Diseased Heart. A. M. Master.—p. 2634.
*Diagnosis of Postconcussional State. G. M. Beck.—p. 2642.
*Effects of Combined Ambulatory Insulin and Electroshock Therapy in Treatment of Schizophrenia: Preliminary Report. P. Polatin and H. Spotnitz.—p. 2648.

Endocrine Factors in Female Sterility.—Rubin thinks that under the influence of exaggerated claims made for hormonal extracts in sterility these substances are employed to the neglect of other essential therapeutic measures. Two endocrine products have therapeutic influence in sterility—thyroid and estrogens; thyroid for its trophic influence on the ovaries and general metabolism, and estrogens for their activating effect on the oviducts and possibly also on the cervical secretion. In suppressed menstruation and anovular menstruation an effective endocrine substance is not yet available. Fractional x-ray irradiation of the ovaries in many instances leads to normal menstrual cycles and increases the possibility of impregnation. Conservative surgery such as resecting the microfollicle cystic-bearing portions of the ovaries has brought about regulation of the menstrual cycle in puberty bleeding and in functional menometrorrhagia of young women. This procedure is also capable of restoring menstruation which is habitually delayed.

Diagnosis of Postconcussional State.—Beck hopes that the material he presents will help clarify the confused picture of the postconcussional reaction and differentiate between traumatic cerebral dysfunction and pure anxiety. One hundred and seventy-two patients who experienced either a blast or a head injury were analyzed and compared with 50 patients with a nontraumatic anxiety. The characteristic symptoms in the postconcussional patients in the order of frequency were headache, unconsciousness, insecurity feeling, emotionalism, vertigo, difficulty in thinking, difficulty in letter writing and anomia. The most prominent diagnostic physical defects were in relation to the eyes. These consisted of convergence defect, nystagmus, disturbed upward gaze, external ocular muscle imbalance and inequality of pupils. Eighty-four per cent of the postconcussional patients had at least one of these eye signs. Real vertigo was frequent in the patient with a postconcussional reaction; it did not occur in the nonorganic control group. Word recall was the only test of the mental status, the results of which indicated a postconcussional reaction. Some of the previously forgotten events related to the injury were recalled by the postconcussional patients after sodium amytal narcosis.

Combined Insulin and Electroshock Therapy in Schizophrenia.—Polatin and Spotnitz gave electroshock three times weekly and ambulatory insulin six times weekly. On three days during the week the patients received ambulatory insulin in the early morning and later that morning an electroconvulsion. The electroshock treatment was continued for about seven weeks until the patient had received twenty convulsions, and the ambulatory insulin was continued for eleven weeks. Of 30 schizophrenic women treated in this way 23 were improved, 18 of them so considerably that they were restored to approximately their prepsychotic level of functioning. Seven patients remained unimproved. The effectiveness of the therapy did not appear to be limited by the duration of the psychosis, the prepsychotic personality or the type of schizophrenia.

Western J. Surg., Obst. & Gynecology, Portland, Ore.

54:467-510 (Dec.) 1946

Radioactive Isotopes. J. W. Buchta.—p. 467.
*Radioactive Iodine in Study of Thyroid Physiology: VII. Use of Radioactive Iodine Therapy in Graves' Disease. S. Hertz and A. Roberts.—p. 474.
Plan for Analysis of Biologic Factors Involved in Experimental Carcinogenesis of Thyroid by Means of Radioactive Isotopes. S. Hertz.—p. 487.
Endometriosis and Adenomyosis. Y. C. Yin.—p. 490.

Radioactive Iodine Therapy in Hyperthyroidism.—The present paper by Hertz and Roberts is a three to five year follow-up report on early experiences with "internal irradiation" in the treatment of 29 cases of hyperthyroidism. Analysis of both failures and successes reveals that radioactive iodine when given in the dosage range of 5 to 25 millicuries to uniodinized patients with hyperthyroidism possessing goiters of 60 to 75 Gm. is highly effective in about 80 per cent of cases. When appreciable activity has been administered and subtotal thyroidectomy is resorted to, myxedema or hypometabolism may be expected to develop in a large fraction of the cases (100 per cent in 5 cases in this series).

Wisconsin Medical Journal, Madison

45:1115-1252 (Dec.) 1946

Reversibility of Hypertensive Heart Disease by Lumbodorsal Sympathectomy. P. D. White.—p. 1135.
Recent Advances in Immunization Procedures. R. P. Schowalter.—p. 1139.
Hemoglobinuric Nephrosis. D. M. Angevine.—p. 1143.

Yale Journal of Biology and Medicine, New Haven

19:141-234 (Dec.) 1946

Erasmus Wilson on Ringworm. M. J. Strauss.—p. 141.
Heterologous Transplantation of Uroepithelial Tumors: Part II. Transplantation of Bladder Tumors. M. S. Hovenanian and C. L. Deming.—p. 149.
Alleviation of Pylorospasm and Colic in Infants by Reducing Volume of Food Intake per Feeding. A. S. Brackett.—p. 155.
Pelvic Survey. H. Thoms.—p. 171.
Introduction to Study on Nervous System of Ateles. H. Chang and T. C. Ruch.—p. 181.
Crawford Williamson Long. A. Beaton.—p. 189.
Contribution of Anesthesia to Psychiatry. B. E. Moore.—p. 195.
Vision and Daring of Youth: Story of Introduction of Surgical Anesthesia. J. F. Fulton.—p. 207.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Dermatology and Syphilis, London

58:263-340 (Nov.-Dec.) 1946

*Preliminary Report of Dermatosis Due Possibly to Mepacrine: Description of 26 Cases Seen in Italy. G. A. G. Peterkin and H. C. Hair.—p. 263.
Tropical Lichenoid Dermatitis. A. Bigham.—p. 271.
Degeneratio Colloidalis Cutis Solaris: Purpura Solaris: Etiologic and Clinical Considerations. C. Berlin.—p. 274.
Traumatic Marginal Alopecia Due to Traction on Hair. O. G. Costa.—p. 280.
Haemolytic Streptococcal Infection in Dogs. T. Hare.—p. 286.
Mode of Penetration of Skin by Mustard Gas. H. Cullumbine.—p. 291.
Penetration of Anti-Gas Ointments into Skin. H. Cullumbine and H. F. Liddell.—p. 294.
Incidence of Clinical Acne in Men. H. A. W. Forbes.—p. 298.

Dermatosis Due to Quinacrine Hydrochloride.—Peterkin and Hair detected 26 instances of exfoliative dermatitis due to quinacrine hydrochloride (Atabrine) among British and Canadian troops in Italy. Primary lesions often appeared as dry hyperkeratosis of the palms and soles with cracking or as small deep purplish nodules, usually on the feet and hands. These were soon followed by a rash on the trunk and limbs, which tended to run along the lines of cleavage of the skin in the form of erythematosquamous patches not unlike pityriasis rosea. With these there also appeared indurated plaques more or less oval and varying from the size of a pinhead to the size of a walnut. These were dark violet and ill defined and left an intense pigmentation. These plaques had sites of predilection round the neck like a necklace, round the costal margin, on the inner surface of the thighs and on the feet, ankles, hands and forearms. Some patients had crusted impetiginous lesions of the chin, ears, eyebrows and flexures. In many, phrynoderma was evident, the skin having a nutmeg grater feel and looking not unlike pityriasis rubra pilaris. Several men had patches closely resembling lupus erythematosus. Oral lesions tended to appear about the same time as the generalized eruption and were of three types: bullae or ulcers and cheilitis, lesions indistinguishable from lichen planus. Administration of quinacrine to 3 patients whose skin lesions had practically disappeared caused an exacerbation of the eruption. The authors do not regard these skin complications as contraindications to the use of quinacrine since any drug is liable to produce toxic effects in a certain number of persons.

British Medical Journal, London

2:845-884 (Dec. 7) 1946

*Treatment of Breast Abscesses with Penicillin. Mary E. Florey, J. S. MacVine and Mary A. M. Bigby.—p. 845.
Chemotherapy of Tuberculosis: Research During Past 100 Years. P. D'Arcy Hart.—p. 849.
*Ambiguous Inhibition of Staphylococci by Penicillin Inactivated with Penicillinase. R. F. Hunwicke.—p. 855.
Mesenteric Occlusion: Review of Recent Methods of Treatment, with Notes on 6 Instances. H. M. Williams.—p. 856.
Reiter's Disease. C. R. Baxter.—p. 858.

Penicillin for Breast Abscess.—Florey and her associates compare the results obtained with penicillin in breast abscesses with those obtained with the methods used when penicillin is not employed. The cases number 36 and were chosen for the control or penicillin series in strictly alternate chronologic order. There were 22 abscesses in the 18 control cases and 24 in the 18 penicillin treated cases. The average healing time in penicillin treated cases was reduced to half that in controls. Suppuration was hastened but ceased more rapidly. The use of diethylstilbestrol was not necessary and the mothers were able to continue suckling throughout treatment. The number of operations was reduced from 22 to 4. The total number of days during which treatment at the hospital was required was reduced from 661 to 232. Penicillin treatment consists in the preliminary use of intramuscular injections followed by local administration.

Inhibition of Staphylococci by Inactivated Penicillin.—Hunwicke says that at his laboratory penicillinase prepared by the growth of certain strains of Bacillus subtilis in broth has been used to inactivate penicillin before testing for sterility. A 1:20 dilution of the penicillinase preparation in water is added in ascending quantities to a series of broth tubes each containing 4,000 units of penicillin. These are inoculated with a loopful of broth culture of a sensitive staphylococcus, and the end point is read after forty hours' incubation at 37 C. On one occasion 20,000 units of penicillin was erroneously added to each tube in setting up the assay. On this being realized, the penicillinase was diluted 1:4 instead of 1:20, the assumption being that this would give the same result. However, no growth of staphylococcus occurred in the tubes. The assay was then repeated at the normal level of dilution and an end point was obtained as usual near the middle of the range. This incident suggested that the ability of staphylococci to grow in broth plus inactivated penicillin is limited to a certain range of concentration of penicillin. The author describes experiments that were carried out in order to throw light on this ambiguous inhibition. He concludes that staphylococci are inhibited by penicillin above a certain concentration, notwithstanding that the penicillin is shown to have been inactivated by penicillinase. This does not occur with "pure" penicillin, suggesting that the inhibition is due to impurities. Similar inhibition occurs in penicillin dilutions in broth below a certain concentration. In this instance the inhibition is due to the penicillinase having failed to inactivate. In both instances, if the penicillin in broth is rendered capable of supporting growth by diluting the high concentrations or by adding excess penicillinase to low concentrations, growth of staphylococci occurs with extraordinary rapidity. The implications of the observations are discussed from the point of view of sterility testing of penicillin.

J. of Obst. & Gynaec. of Brit. Empire, Manchester

53:205-308 (June) 1946

Action of Adrenaline on Excised Human Uterus, with Short Additional Note on Action of Quinine. J. A. Gunn and C. S. Russell.—p. 205.
Molding of Fetal Head: Compensatroy Mechanism. J. Baxter.—p. 212.
*Acute Inversion of Uterus. A. W. Spain.—p. 219.
*Diabetes Insipidus in Association with Postpartum Pituitary Necrosis: Report of 2 Cases. A. W. Spain and F. Geoghegan.—p. 223.
Study of Normal and Abnormal Menstrual Function in Auxiliary Territorial Service. Cecil Mary Drillien.—p. 228.
Classification of Human Pelvis, with Preliminary Note on Evolution of Anthropoid or Ultradolichopellic Type of Pelvis. O. S. Heyns. p. 242.
Nutritional Survey Among Pregnant Women. J. Young, E. J. King, Elizabeth Wood and I. D. P. Wootton.—p. 251.
*Hemoglobin Values in Female Workers. D. T. Davies, E. B. Gunson, Audrey Matheson and M. Pyke.—p. 260.
Calcium and Phosphorus Metabolism in Pregnancy: Survey Under War and Post-War Conditions: Preliminary Communication. E. Obermer.—p. 269.
Residential Rest During Antenatal Period. G. M. Allen-Williams and I. Sutherland.—p. 278.
Full Time Secondary Abdominal Pregnancy with Delivery of Living Child. H. S. Waters.—p. 285.

Acute Inversion of Uterus.—Spain reports 2 personally observed cases of acute inversion of uterus. In both the inversion was complete without prolapse. In both "cupping" of the uterus was not noted by abdominal palpation although the patients were thin. In the first case the absence of the two signs mentioned prompted delay in vaginal examination and reduction. This delay may have been responsible for the death of the patient. In the second case vaginal examination was made at once although both signs were absent, and immediate reduction was carried out. Immediate reduction is the most important part of the treatment of the shock resulting from this accident.

Diabetes Insipidus with Postpartum Pituitary Necrosis.—According to Spain and Geoghegan it has been established that postpartum ischemic necrosis of the anterior pituitary is a relatively frequent complication in cases in which delivery is attended with a severe degree of collapse. The striking clinical feature of the 2 cases reported by them was the occurrence of an extreme degree of polyuria and the finding at necropsy of necrosis in both the anterior and posterior lobes of the pituitary body. The occurrence of symptoms of diabetes insipidus in association with postpartum necrosis of the pituitary has not previously been commented on. Profound shock occurred at the time of delivery in both cases. In the first case this was associated with acute inversion of the uterus and in the second case with combined accidental hemorrhage occurring in unusually unfavorable circumstances.

Hemoglobin Values in Female Workers.—Davies and his associates made investigations on 2,000 women at an ordnance factory. One group, numbering 1,000, were women living at home; the other 1,000 were residents at a hostel near the factory, freed from the difficulties of traveling and of domestic responsibility. It was found that in spite of wartime restrictions the incidence of anemia was no greater than in times of peace. The married women (especially those with large families) show a higher incidence of anemia. Only 5 per cent of the 2,000 women showed hemoglobin below 11 Gm., while almost 70 per cent were above 13 Gm. The young women fed and housed in hostels showed the best hemoglobin values. The married women showed a less satisfactory state, and anemia was almost twice as frequent in this group.

Lancet, London

2:815-854 (Dec. 7) 1946

Synovial Membrane and Synovial Fluid of Joints. D. V. Davies. —p. 815.
*Relationship of Benign Lymphocytic Meningitis and Glandular Fever. H. Tidy.—p. 819.
*Fluorine Hazards, with Special Reference to Some Social Consequences of Industrial Processes. Margaret M. Murray and D. C. Wilson. —p. 821.
Relapsing Benign Tertian Malaria Treated with Paludrine. R. D. C. Johnstone.—p. 825.
*Myelitis After Antirabic Vaccine: Report of Fatal Case. L. J. Bussell.—p. 826.
Colchicine Ineffective in Inducing Polyploidy in Penicillin Notatum. E. R. Sansome and L. Bannan.—p. 828.

Benign Lymphocytic Meningitis and Glandular Fever.—According to Tidy the clinical symptoms, course and prognosis of benign lymphocytic meningitis and of the neurologic manifestations of glandular fever are indistinguishable. The changes in the cerebrospinal fluid are identical in the two conditions. In glandular fever with neurologic manifestations the glandular enlargement is usually slight. This feature, together with mononucleosis and heterophil agglutinins, may develop only after the neurologic symptoms have subsided or may precede the nervous stage. With the presence of such neurologic symptoms, glandular fever can be excluded only by specific and repeated examinations. Such examinations do not appear to have been performed in cases recorded as benign lymphocytic meningitis, and the possibility of glandular fever as a causal factor has consequently not been excluded.

Fluorine Hazards, with Special Reference to Industrial Processes.—Murray and Wilson point out that an outbreak of fluorosis in cattle has drawn attention to the large amount of fluorine and fluorine compounds being set free by some industrial processes. Naturally occurring or endemic fluorosis attributable to water supplies, and "man-made" fluorosis due to industrial processes should be separately considered, though some of their effects may be the same. Fluorine should be extracted from fumes before allowing them to pass into the atmosphere. In an example mentioned the substitution of closed kilns in the burning of ironstone would make the amount of fluorine present in the ore and coal immaterial from the public health point of view, but methods for such fluorine control are at present too rarely applied, because fluorine hazards are not sufficiently appreciated.

Myelitis After Antirabic Vaccine.—Bussell reports the case of a Sudanese soldier aged 25 who was bitten on hand and ankle by a stray dog. Treatment with antirabic vaccine was begun immediately, but after seven daily injections the patient defaulted. He returned about 7 weeks later saying that the dog was mad and the daily injections were resumed until 13 more had been given. Four days after the last injection be became ill and died four days later. At different stages of the illness diagnoses of meningitis, acute anterior poliomyelitis, and rabies were considered. These possibilities were discarded in turn, and a diagnosis was made of myelitis due to antirabic vaccine, terminating in a bulbar palsy. Paralyses from this cause are not uncommonly reported, but in most cases recovery is the rule. Either a virus or a toxin is held responsible for this complication. The lack of inclusion bodies in the patient's brain or spinal cord and the negative result of the rabbit inoculations might be held against a virus but do not exclude it. No other accidents have been reported following the use of this batch of vaccine, and laboratory investigation for toxicity proved negative. It appears therefore that the patient was abnormally sensitive to some chemical ingredient of the vaccine.

Medical Journal of Australia, Sydney

2:649-684 (Nov. 9) 1946

*Analysis of Peptic Ulcer in South Australia, Based on Study of 1,027 Case Reports. H. W. Linn.—p. 649.
Surgery in Two World Wars. C. W. B. Littlejohn.—p. 659.
*Chemical Nature of Allergens: Observations on "Protein Free" Preparations of Egg White, Linseed and Castor Bean. Patricia Rhoden and C. Sutherland.—p. 662.
Hormones in Gynecology. W. I. Hayes.—p. 663.
Epidemiology of North Queensland Tick Typhus: Natural Mammalian Hosts. F. Fenner.—p. 666.

Peptic Ulcer in South Australia.—Linn reviewed 1,027 cases seen at the Royal Adelaide Hospital between 1939 and 1944 in which there was reliable evidence of peptic ulcer. Duodenal ulcer was found to occur in younger people oftener than gastric ulcer, while the proportion of males to females in both gastric ulcer and duodenal ulcer was seven to one. This figure is high but not nearly so astonishing as the proportions for ruptured gastric ulcer (19 to 1) and for ruptured duodenal ulcer (28 to 1). The question why male patients exceed female patients in cases of chronic peptic ulcer, and especially in cases of ruptured ulcer, has not yet been answered. The fact that the incidence of gastric and duodenal ulcer differs has been cited by some as indicative of a separate etiology, but the author rejects this, pointing out that experimentally gastric and duodenal ulcer have been produced under the same conditions. The variation in incidence and rupture rate may be due to a combination of varying anatomic and physiologic factors, with differing external and predisposing causes. One of these predisposing causes was believed to be the continued consumption of alcoholic liquor. In this survey only 50 per cent of ulcer sufferers drank alcohol at all. This would appear to rule this factor out as a major consideration in the etiology of peptic ulcer, although it is undeniably the cause of some recurrences of symptoms. Smoking likewise is probably not a primary factor but may be an added irritant. It is noteworthy that ruptured gastric ulcer is twice as common as ruptured duodenal ulcer in South Australia, while the reverse is the case elsewhere. The author can offer no explanation of this fact.

Chemical Nature of Allergens.—Rhoden and Sutherland say that until recently most authorities have held that all allergens are protein in nature. In 1942 one of the authors, in seeking to isolate the allergen of house dust, obtained a remarkably active substance from an aqueous extract of house dust by adsorption on benzoic acid, and this was found to give no qualitative reactions for protein. This suggested that it would be of interest deliberately to remove all proteins from extracts of allergens and to see whether the residues showed allergic activity. The authors found that egg white, castor bean and linseed after treatment with several of the classic protein precipitants retain their power to produce skin reactions on hypersensitive subjects. Certain proteins however, such as ovomucoid, are not precipitated by many of the usual protein precipitants. The difficulty of complete separation of mixtures of complex organic compounds is emphasized.

Quarterly Journal of Medicine, Oxford

15:243-326 (Oct.) 1946

Classification of Cases of Glycosuria. A. Lyall.—p. 243.
Clinical Aspects of Polyarteritis Nodosa. H. G. Miller and R. Daley. —p. 255.
*Glycogen Disease. T. Crawford.—p. 285.
*Etiology of Chloroma and Nature of Green Pigment: Report of 3 Cases. J. G. Humble.—p. 299.

Glycogen Disease.—Crawford reports a further 3 cases of von Gierke's disease in which detailed study was made of some aspects of carbohydrate metabolism. The occurrence of an impaired tolerance to intravenous dextrose, an investigation only once previously reported in glycogen disease, is confirmed. From a survey of the available evidence it appears that in this disease the reversible reaction by which dextrose is converted into glycogen and glycogen to dextrose is at fault. This leads to a greater or less degree of carbohydrate starvation of the tissues, with consequent increased metabolism of fat and the production of ketones.

Etiology of Chloroma and Nature of Green Pigment.—Humble stresses the rarity of chloroma and the fact that it is hardly ever diagnosed during life. He reports 3 instances of the disease. In the first patient chloroma complicated chronic myeloid leukemia during treatment with x-rays. The second patient had acute myeloid leukemia which terminated as chloroma. In the third patient chloroma complicated monocytic leukemia. The author suggests that the green pigment resembles choleglobin derivatives and gives reasons for attributing the formation of the green pigment to abnormal breakdown products of hemoglobin.

Acta Clinica Belgica, Brussels

1:97-196 (March) 1946. **Partial Index**

*The Treatment of Paroxysmal Tachycardia with Acetylcholine. M. Segers, J. Lequime and H. Denolin.—p. 97.
Epidemic Myalgia (Bornholm Disease). J. Dagnelie.—p. 103.
Treatment of Hyperthyroidism with Thiouracil and Aminothiazole. P. A. Bastenie and R. F. Tagnon.—p. 117.
Indications and Results of Surgical Treatment of Essential Hypertension. J. Govaerts.—p. 133.
*Treatment of Asthma with Intravenous Administration of Procaine Hydrochloride. H. Durieu, F. De Clercq and A. Duprez.—p. 150.

Acetylcholine in Paroxysmal Tachycardia.—Segers and his associates were able to arrest 81 attacks of paroxysmal tachycardia by the intravenous injection of acetylcholine. The injection must be made as rapidly as possible while the subject is in dorsal decubitus. The first dose consists of 0.02 Gm. If this proves insufficient, larger doses are injected every three or four minutes. The general reactions observed after these injections do not involve danger because acetylcholine is rapidly destroyed in the organism.

Intravenous Procaine Hydrochloride for Asthma.—Durieu and his associates used daily intravenous injections of from 5 to 20 cc. of a 1 per cent solution of procaine hydrochloride without epinephrine on 25 asthmatic patients. In asthma patients with typical attacks but who have neither emphysema nor chronic asthma, lasting improvement is obtained in half of the cases and temporary improvement in another 30 per cent. Of patients in whom asthma is accompanied with emphysema and bronchitis only 30 per cent show temporary improvement and in the dyspnea of pulmonary sclerosis the treatment is useless. Preliminary oral administration of phenobarbital seems to improve the tolerance for procaine hydrochloride. Neither the allergic state nor the neurovegetative disturbance is influenced by the procaine hydrochloride.

Archives Françaises de Pédiatrie, Paris

3:193-288 (No. 3) 1946

Contribution to Study of Human Lactation (Part I). J. Van Espen.—p. 193.
*Results Obtained From Diet of Carrots and of Powdered St. John's Bread in Diarrheas of Suckling Infants. P. Rohmer, R. Sacrez and J. A. Rohmer.—p. 214.
Study of Variations of System of Vitamin C in Children. P. Rohmer, N. Bessonow, R. Sacrez and Miss H. Leroux.—p. 220.
Form of Whooping Cough Associated with Apnea in Suckling Infants. M. Janbon, J. Chaptal, G. Vallat and L. Bertrand.—p. 224.
Subdural Hygroma in Suckling Infants. C. Gros and J. Balmes.—p. 232.

Diets for Infant Diarrheas.—Rohmer and his associates used a diet of concoctions of powdered St. John's bread (50 Gm. of powder in 1 liter of water) or of soup of carrots (500 Gm. of carrots cut into small pieces and boiled in 500 Gm. of water for two to three hours) in the treatment of mild and severe noninfectious or infectious dyspepsia in 76 infants between the ages of 8 days and 11 months and in the treatment of enteritis in 21 infants. Hydrating solutions were administered for fifteen to eighteen hours in cases of severe dyspepsia and for twenty-four hours in cases of mild dyspepsia; feeding was then resumed with one of the two diets, thus preventing starvation, and the formula was slowly increased to full strength within eight days. This period was shortened to six days in 7 cases of infectious dyspepsia and to four to seven days in 8 cases of noninfectious dyspepsia. Either one of the diets was effective, since feces changed their form rapidly within two to three days. A less rapid improvement suggests the existence or persistence of an infectious cause which should accordingly be treated.

Journal de Chirurgie, Paris

62:249-340 (No. 7-8) 1946

Identification and Treatment of Pulmonary Embolism, with Exception of Pulmonary Embolectomy. R. Fontaine in collaboration with Andrée Greiner-Oswald.—p. 249.
Surgical Treatment of Pulmonary Embolism. H. Redon.—p. 267.
*Preservation of Sphincter Function in Operative Cure of Cancer of Rectum. F. d'Allaines and R. de Vernejoul.—p. 274.
Repair of Traumatic Loss of Substance of Nerve Trunks of Extremities: Physiopathologic Study. P. Wertheimer.—p. 288.
Treatment of Loss of Substance of Peripheral Nerves. M. d'Aubigné.—p. 292.
Repair of Wounds with Traumatic Loss of Substance of Nerve Trunks of Extremities: Anatomicoclinical Study. L. Dejardin.—p. 306.

Preservation of Sphincter Function.—D'Allaines and de Vernejoul performed abdominosacral excision of a considerable portion of the rectum with preservation of the mucosa of the anal canal in 57 patients with cancer of the rectum. The patients were between the ages of 35 and 73. Continence with respect to liquid stools and gas resulted in 38 patients, less good results with incomplete continence for liquid stools were obtained in 15 patients and there were unsatisfactory results in 4 patients. In contrast to the majority of the French surgeons, the authors believe that conservative surgical treatment based on anatomicopathologic principles is justified in a large number of cases of cancer of the rectum, since control examinations six months to ten years after the intervention revealed that the incidence of recurrences and of metastases in these cases was not higher than in those in which mutilating amputation of the rectum had been performed.

Presse Médicale, Paris

54:677-696 (Oct. 19) 1946

Significance of Symptoms of Acute Leukemia. P. L. Drouet, L. Pierquin and R. Herbeuval.—p. 677.
*Danger of Use of Cadmium Lined Containers for Foods and Drinks. R. Monnet and F. Sabon.—p. 677.
*Blood Transfusions in Treatment of Hemoglobinuric (Blackwater) Fever. J. Julliard and L. J. Escalle.—p. 678.
Skin Transplantation to Cure Eventration. R. Dantlo.—p. 680.

Danger of Cadmium Lined Food Containers.—Monnet and Sabon report that 300 persons developed food poisoning after eating in a worker's canteen. The poisoning was caused by wine which had been kept for several hours in cadmium lined containers. The wine was found to contain from 100 to 180 mg. of cadmium per liter. After citing reports on many similar cases of poisoning caused by drinks or foods that had been kept in cadmium lined containers, the authors point out that from fifteen to ninety minutes after ingestion of such drinks or foods there appear signs of gastrointestinal intoxication with dryness of the mouth and throat, nausea, epigastric pains, gastric cramps, vomiting and severe diarrhea. The patients usually recover in less than a day or two, because the decided emetic effect of cadmium causes rapid elimination. It should be called to the attention of industrialists, hygienists and physicians that cadmium lined containers should not be used in the handling of foods and drinks.

Blood Transfusion for Hemoglobinuric Fevers.—Julliard and Escalle present the histories of 5 malarial patients who developed blackwater fever. The hemoglobinuria was accompanied with splenomegaly, rapid pulse, sweats, chills, vomiting and erythrocyte counts of only about one million. The patients were given blood transfusions from universal donors and have recovered. Concurrently with the blood transfusions the patients were given quinine intramuscularly, quinacrine subcutaneously, a cardiac stimulant, a diuretic and rehydrating treatments. The result was that on about the third day the patients usually were convalescent. From 150 to 250 cc. was injected at each transfusion, and the total never exceeded 700 Gm. The authors conclude that blood transfusion is a powerful weapon in the treatment of blackwater fever, because of 22 patients with hemoglobinuric fever who were treated with the ordinary methods and were not given transfusions, 7 died.

Cardiologia, Basel

10:305-412 (No. 6) 1946

Study of Electrocardiogram in Atrioventricular Block. G. Fatzer. —p. 305.
*Myocardial Changes Caused by Inanition. R. Forster.—p. 369.
*Electrocardiographic and Spirometric Investigations in Epitheloid Celled Granulomatosis (Besnier-Boeck-Schaumann's Disease). S. J. Leitner. —p. 379.
Chronic Myocarditis as Independent Disease Entity. R. Jaffé.—p. 402.

Electrocardiographic Changes Due to Inanition.—*Observations on 50 patients* who had been starved in concentration camps revealed that circulatory changes are almost a constant symptom of severe inanition. Reduction in the height of the T wave was regularly observed, and somewhat less frequently the amplitude was abnormally small. In cases in which inanition was complicated by infectious diseases or by preexisting heart disease, complicated electrocardiographic changes were evident. Hunger edema and reversible diffuse impairment of the myocardium frequently play a part in the development of these changes. Pathologic studies reveal regressive changes, chiefly fatty degeneration. The myocardial metabolism becomes impaired by disturbances in the ferment system and by deficiency in vitamin B_1.

Electrocardiographic and Spirometric Investigations in Besnier-Boeck-Schaumann's Disease.—According to Leitner impairment of the cardiac and pulmonary functions is relatively frequent in Boeck's disease. It may be primary because the heart is attacked by the disease, or secondary because of overburdening of the right side of the heart in the presence of long duration of pulmonary lesions and inadequate arterialization. The author found that 8 of 17 patients with Boeck's disease had electrocardiographic evidence of myocardial lesions; 1 patient had a patent ductus arteriosus. The electrocardiographic changes were intensified by physical work in 7 out of 8 patients. Oxygen inspiration abolished the electrocardiographic changes in 2 cases. Spirometry often revealed pulmonary disturbances.

Gastroenterologia, Basel

71:193-256 (No. 4) 1946

*Occurrence of So-Called Silver Cells in Islet Tumors and in Pancreas in Cases of Islet Tumors. G. T. Hultquist.—p. 193.
Incidence of Ulcuscarcinoma of Stomach. B. J. Koszewski.—p. 210.
Problems of Allergy; Histidine Treatment of Diseases Caused by Allergy. P. Kallós.—p. 233.

Argentaffin Cells in Pancreatic Islet Cell Tumors.—Hultquist reports a microscopic study of 3 tumors of the islands of Langerhans in men between the ages of 17 and 43. The extirpated tumors were morphologically of common type and presented no signs of malignancy. When stained with silver solutions the tumor tissue and especially the nuclei presented a diffuse, strongly brown color in contrast to the rather pale island tissue and to the parenchyma surrounding the tumor. *In 2 cases argentaffin cells were demonstrated in the pancreatic* tissue adjacent to the tumor and in the tumor itself where they were situated at the edges of the heaps of tumor cells corresponding to the common localization of argentaffin cells. Spool and star shaped cells with long, narrow branches showed silver impregnated fibrils. These cells may be considered as reticular or satellite cells, forming a network in some places in the tumor parenchyma. The island tissue of the surrounding pancreatic parenchyma showed a considerable increase in argentaffin cells. This may be considered as a manifestation of the reduced activity of the islands and probably depends on the fact that a major part of the production of insulin has been assumed by the island tumor.

Boletim d. San. São Lucas, São Paulo

8:35-48 (Sept.) 1946. **Partial Index**

*Intrathoracic Meningocele. J. M. Cabello Campos.—p. 40.

Intrathoracic Meningocele.—Intrathoracic meningocele is rare. The diagnosis is made by the x-ray appearance of the chest, which shows a round image, similar to that of a benign tumor near the spine and the pulmonary field, in persons with skeletal deformities. Neurofibromatosis of the skin is frequently found. Two cases are reported.

Ginecolog. y Obstet. de Mex., Mexico, D. F.

1:213-272 (Oct.-Dec.) 1946. **Partial Index**

*Conservative Surgery in Tubal Pregnancy. J. C. Graham F.—p. 221.
Fulminant Pelvic Edema: Case. M. Madrazo B.—p. 247.

Conservative Surgery in Tubal Pregnancy.—Graham F. advises preservation of the oviducts in all cases of tubal pregnancy except in cases of acute infection, when salpingectomy is indicated. The management of the oviducts in tubal pregnancy depends on whether or not the tube is normal or ruptured. *If it is normal, treatment consists in simple salpingotomy*, emptying of the contents and reconstruction of the tube. If the tube is ruptured without great destruction, the ruptured segment is sutured. If the rupture results in destruction of the tube, the tube is amputated up to the ampullar segment and a new abdominal os is reconstructed. The percentage of patients who obtain normal intrauterine pregnancies with delivery of normal infants is satisfactory. Three cases with living infants at full term after conservative surgical treatment of tubal pregnancy are reported.

Medicina, Mexico, D. F.

26:449-468 (Nov. 10) 1946. **Partial Index**

*Diagnosis of Choledocholithiasis. P. L. Mirizzi.—p. 449.

Diagnosis of Choledocholithiasis.—Mirizzi says that diagnosis of stone in the common bile duct is facilitated by cholangiography in the course of a celiotomy. He describes the various roentgenologic findings of calculi in the common bile duct, the ampulla of Vater and the hepatic duct and its branches.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

90:1423-1502 (Oct. 19) 1946. **Partial Index**

*Value of Melanophore Reaction in Diagnosis of Pregnancy. J. E. de Bourgraaf and E. Dingemanse.—p. 1430.
Sulfonamide Preparations. A. de Groot.—p. 1433.
Modified Hematologic Standard Values as Result of Deficient Diet. S. I. de Vries.—p. 1434.

Melanophore Reaction in Diagnosis of Pregnancy.—De Bourgraaf and Dingemanse direct attention to the pregnancy test described by Konsuloff in 1934. Urine is injected into hypophysectomized frogs, and if the frog assumes a dark color half an hour to two hours later the urine is from a pregnant woman. Since the same reaction follows if hypophysial extracts are injected, it is ascribed to the melanophore hormone. The authors used this test on 400 specimens of urine. The outcome was positive in 253 and negative in 147 cases. Verification after three months revealed that the outcome had been correct in 399 cases. The one erroneous result was obtained in a woman of menopausal age.

Nordisk Medicin, Gothenburg

31:1603-1650 (July 26) 1946. **Partial Index**

Penicillin Treatment in Subacute Bacterial Endocarditis. E. Nyman. —p. 1603.

Hospitalstidende

*Case Reports and Remarks on Operative Treatment of Incontinence of Urine in Women. L. Østergaard Christensen.—p. 1607.

Finska Läkaresällskapets Handlingar

Treatment of Congenital Syphilis. O. Enkvist.—p. 1613.
Ten Years' Experience in Treatment of Diabetes Mellitus in Children in Finland with Free Diet. P. Forsell.—p. 1615.

Medicinsk Revue

Two Cases of Abrikossoff's Myoblastmyoma. H. Jensen.—p. 1623.

Hygiea

Diagnosis of Achylia. E. Forsgren.—p. 1639.

Operative Treatment of Incontinence of Urine in Women.—Of Christensen's 8 severe cases of incontinence of urine treated by Göbell-Stöckel's operation 5 were due to birth trauma; 3 were in nulliparas. The results were good in all cases. He says that in women who have borne children but do not have genital prolapse simple plastic operation is probably the normal method, but 4 of the 5 had previously been operated on by this method without success. In nulliparas simple plastic surgery is not rational. Göbell-Stöckel's operation is perhaps preferable in all cases of incontinence of urine without genital prolapse requiring treatment.

Book Notices

Human Embryology. By Bradley M. Patten, Professor of Anatomy in the University of Michigan Medical School, Ann Arbor, Michigan. Fabrikoid. Price, $7. Pp. 776, with 1,366 illustrations. Blakiston Company; 1012 Walnut St., Philadelphia 5, 1946.

This completes a series of three textbooks on the subject of development by Professor Patten. It is a much more complete treatise than either of his little books on chick and pig embryos. While the emphasis is decidedly on the human species, the factual material is by no means confined to that. Observations and experiments in embryos and fetuses of many species have been coordinated with the knowledge which has been obtained by studying man. The result is a readable and well organized textbook on the subject of development. In fact, it is more than a textbook for beginning students; it will be of great interest to more advanced readers.

After an introduction, in which the history of the science of embryology is dealt with all too briefly, fifty pages are devoted to gametogenesis, the sexual cycle and fertilization. These are well treated, clearly written and adequately illustrated, providing in concise form basic factual matter needed to understand the origin of embryonic life. Cleavage, germ layers, early differentiation of the embryonic body and establishment of organ systems take up the next eighty pages of the book. Thus are concisely covered the subjects which usually comprise the major part of a college course in embryology. The succeeding chapters on the fetal membranes and placenta and human fetal-maternal relations complete what might be considered basic embryology. Mastery of this first part of the book is a requisite to the study of medicine. Appreciation of adult body structure is dependent on knowledge of such facts as these.

The seventh chapter of the book, dealing with embryonic age, growth and changes in external form of the body, and chapter eight, on teratology and twinning, are handled in a most capable fashion. No doubt the author has given much thought to ways of limiting the amount of factual material to a satisfactory fraction of the book. Such interesting subjects easily could have been overwritten.

The greater part of the book is devoted to systemic embryology; that is, the development and histogenesis of the various organ systems of the body. Comprising the last two thirds of the book, this will appeal to the more mature student because it requires some knowledge of gross anatomy and histology. Reading these sections on the organ systems, one is at once impressed by gaps in our knowledge of histogenesis, especially in later stages. Any one who feels that the embryologist has run his course of investigation has only to read such chapters as those on the nervous system and sense organs to realize how much remains to be learned concerning development of the human body.

Professor Patten concludes each chapter on systemic embryology with a section on anomalies encountered in that system. Most of these accounts are exceedingly interesting and the only criticism that might be raised is that this part of the subject may be overemphasized, though of course this is purely a matter of personal opinion. Some may be led to conclude that the purpose of embryology is to explain abnormalities.

The chapter on development of the nervous system seems to be less well organized than some other parts of the book. It is prefaced by a synopsis of neuroanatomy and neurophysiology, in ten easy pages, containing no illustrations other than a complex schematic diagram of fiber tracts. It is doubtful that this part of the chapter serves a useful function because beginning students will not find the remainder of the chapter clearly understandable without first obtaining a more considerable knowledge of anatomy and neurology. Some of the more neurologically-inclined readers may feel that full advantage has not been taken of all recent investigation in the field of histogenesis of the nervous system. For example, hardly more than one page is devoted to the autonomic nervous system, and the one illustration does not provide all the information desired.

Chapters on development of the face, jaws and teeth, the digestive and respiratory systems and the body cavities and mesenteries are well done. One wonders, however, why fetal swallowing and gastrointestinal movements were not considered, when fetal respiratory movements in utero were; and especially so when the former phenomena are well established and the latter is of doubtful occurrence. The acceptance of such concepts as that expressed in the author's statement that "the partial distention of the pulmonary lobules regularly seen in sections of certain areas of fetal lungs strongly suggests that the aspiration of a certain amount of amniotic fluid is a regular intrauterine occurrence" indicated an uncritical evaluation of experimental evidence available in the literature.

The endocrine glands and derivatives of the embryonic pharynx form the subjects of chapter seventeen. Chapter eighteen is devoted to the development of the urogenital system. The final chapter, nineteen, has to do with the formation of the blood vascular system and heart as well as the lymphatic system. As is to be expected from the author's research interests, the account of the heart is especially noteworthy. The concluding pages of the last chapter of the book are devoted to postnatal changes in the circulation. Professor Patten accepts the concept of crossing caval blood streams in the right atrium of the fetal heart, but with reservations. It would seem that rather more emphasis has been placed on demonstrable structural observations than on physiologic experiments. The account as it stands will not receive the wholehearted approval of all students of the subject.

One of the most useful contributions that Professor Patten has made in this textbook is the publication of a large number of new illustrations, many of these from his own collection of human embryos and others from scientific articles of recent date. The generous use of photographs and of color in drawings is commendable. Of course there are many places in the book where one would wish for illustrations which are not there.

Any first edition is bound to have defects of omission. This one is no exception. For example, nothing is included about the histogenesis of the spleen, an organ of more importance to the embryo and fetus than to the adult. In the central nervous system, not all of the illustrations are well chosen. For example, figure 220 leaves a great deal to be desired.

An extensive bibliography will be found at the back of the book containing references to the principal sources of information. This bibliography is arranged according to chapter. In a sense it forms an appendix, for there is no system of reference numbers throughout the text to direct the reader's attention to particular sources of information. When one tries to follow the bibliography while reading the text one has the feeling that the author would have guarded the accuracy of his statements more closely had he used the method of specific reference while writing.

In spite of the several shortcomings—and any first edition of a book so comprehensive as this is bound to have shortcomings—this textbook is a noteworthy contribution to the subject of embryology. Those who have followed the course of its preparation and have looked forward to its appearance in print will, to be sure, not be disappointed in the result of Professor Patten's labors. A word of commendation is also due to the publishers. The book is most attractive.

Leprosy. By Sir Leonard Rogers, K.C.S.I., C.I.E., M.D., and Ernest Muir, C.I.E., M.D., F.R.C.S., Medical Secretary, British Empire Leprosy Relief Association, London. Third edition. Cloth. Price, $7. Pp. 280, with 88 illustrations. William Wood and Company, Mt. Royal & Guilford Aves., Baltimore 2, 1946.

The authors characterize the first edition of this book as a summary of previous literature of practical bearing and a clear description of the clinical and therapeutic aspects of leprosy. It was presented for the use of "workers" in affected countries. The present edition is a compend of historical accounts, modern reports and citations relative to epidemiology and prophylaxis written by one author; and a discussion of etiology, clinical findings and treatment by the second author. It is a duodecimo volume of 266 pages, exclusive of bibliography, whose scope includes all phases of the subject from ancient beliefs and traditions covering its origin to the minutiae of a metatarsectomy, with a photograph of the resultant scar and the preparation of a film for bacteriologic examination. Sixty odd clinical photographs are appended which, on the whole, are easily decipherable. A half dozen reproductions of histologic pictures interpolated among them are indistinct. The preparation of sections or subsections on epidemiology, communicability; etiology, incubation and incidence suggest that they were developed independently of one another. This impression arises because of repetitions and personal opinions which are somewhat confusing to a reader if indeed they are not conflicting. One author lays great emphasis on a correlation of incidence, rainfall and latitude while the other, in commenting on the influence of climate on incidence, states that "it must be remembered that hot moist climates are commonly inhabited by people in a low stage of civilization living in overcrowded houses, conditions predisposing to infection." Both recognize the probable influence of intimate contact in the spread of the disease. The divisions of the subject, the subheadings, their sequence and the style of presentation suggest a series of conversational or pedagogic discussions in which, somewhat in consequence, there are numerous reiterations. Opinions are offered in explanation of natural phenomena of the disease which are rather categorical, though there are passages elsewhere in the text which show that the authors are aware that proof of their conclusions is lacking. The simplicity and clarity of the writing and the comprehensive range of facts and observations appear to have accomplished well the purpose of these two experienced students in the development of a practical manual for the workers in leprosy in the more severely affected countries.

Are You Considering Psychoanalysis? Edited by Karen Horney, M.D. Cloth. Price, $3. Pp. 262. W. W. Norton & Co., Inc., 70 Fifth Ave., New York 11, 1946.

This book represents another promotion of the "Association for the Advancement of Psychoanalysis." Most trained and experienced psychoanalysts do not agree that the association advances the science of psychoanalysis, although many doubtless agree that the publications are intended to advance ideas which have been promulgated by the association and particularly by Karen Horney and her followers. Dr. Horney and a few of her adherents withdrew from the American Psychoanalytic Society (which was a natural outgrowth of the International Psychoanalytic Association) to found their own association and school. This new school apparently exists only in New York. All other schools or, as they are called, "institutes for psychoanalysis" are affiliated with the American Psychoanalytic Association. At present affiliated institutes are located in New York, Chicago, Detroit, Washington, Baltimore, Topeka, Los Angeles and San Francisco.

When Freud first published his findings, which in the beginning consisted of theoretical conclusions and deductions as well as undisputable evidence of the presence and strength of the unconscious (repression), his writings stirred up considerable antagonism, particularly to the acceptance of an unconscious but also to the fact that his patients inevitably led the way back to early (infantile) sexual conflicts. No one will accuse Freud of directing his patient's conscious or unconscious thinking, and therefore he reported only what was unfolded to him during psychoanalytic consultations. Now Horney and her school, in this and other publications, have capitalized on this resistance to early sexual conflicts as being of paramount importance in the production of neuroses. Neither Freud nor any of his followers ever claimed, as Horney and her followers infer, that sexuality is the only conflict. To minimize its importance as the Horney school tries to do would appear to be an attempt to seduce prospective patients into the belief that the only really good psychoanalysts today are those who belong to this small minority group. This is particularly well illustrated in the chapter "Who Should Your Analyst Be?" After much compulsive rambling the author, Dr. Harold Kelman, comes eventually to the inevitable (for him) conclusion that the analyst of choice, be it male or female, should of course be a follower of the Horney school.

The book is well written and contains many thoroughly sound observations which have been made previously by other writers who were not so prejudiced but were open minded to the experiences and conclusions formulated by their co-workers in this field. Psychoanalysis has become more and more widely accepted as a sound, basic, scientific approach to the study and treatment of personality disorders and as such every conscientious student and practitioner will accept any conclusion that can be proved, while questioning those which cannot. This book, which will probably have appeal to the lay reader, is not recommended to the medical profession.

The Essentials of Obstetrics and Gynecology. By William Albert Scott, B.A., M.B., F.R.C.S., Professor of Obstetrics and Gynecology, University of Toronto, Toronto, and H. Brookfield Van Wyck, B.A., M.B., F.R.C.S., Assistant Professor of Obstetrics and Gynecology, University of Toronto. Cloth. Price, $5.50. Pp. 390, with 91 illustrations. Lea & Febiger, Washington Square. Philadelphia 6, 1946.

This small manual contains many useful and essential facts about obstetrics and gynecology, but unfortunately some subjects are treated too briefly. Thus the entire subject of sterility is discussed in three and a half pages, and the menopause is described on only one page. On the other hand, more than a page is devoted to dyspareunia which is far less important than the menopause, and seven pages and six illustrations are given over to congenital malformations. Only half a page is devoted to the Rh factor, and the word erythroblastosis does not even appear in the index.

The authors state that "spinal and local anesthesia during labor have their advocates but are not widely used." This is undoubtedly true in Canada but not in the United States, where both forms of anesthesia, particularly spinal, is being used more and more. The conservative treatment of eclampsia is properly emphasized. The use of a hydrostatic bag for the treatment of placenta previa is described and illustrated, but fewer and fewer obstetricians use this procedure. Likewise the authors advocate the Braxton Hicks version for certain cases of placenta previa, but this dangerous manipulation is now seldom used in the United States.

The authors should omit mention of the Walcher position (p. 186) because it has been proved to be based on misinformation. In the section on forceps operations only axis traction forceps are illustrated, and in the description of "the essential characteristics of the instrument in general use" the authors include "traction and application handles" as if to imply that all or most obstetricians generally use axis traction forceps. This is not the common practice in the United States. Among the essential conditions for forceps delivery one finds that "there must not be undue disproportion between the maternal pelvis and the fetal head" despite the sounder view that there must not be any disproportion whatever when delivery is attempted through the vagina. Nevertheless the book is definitely of value. It is well written and beautifully illustrated and the type is clear and easily readable.

Die periphere Innervation: Kurze übersichtliche Darstellung des Ursprunges, des Verlaufes und der Ausbreitung der Rückenmarks- und Gehirnnerven sowie der Nerven des autonomen Systems mit Berücksichtigung wichtigster pathologischer Verhältnisse. Von Emil Villiger. Bearbeitet von Eugen Ludwig, o. ö. Professor der Anatomie in Basel, Basel, Switzerland. Tenth edition. Cloth. Price, 16 Swiss francs. Pp. 172, with 71 illustrations. Benno Schwabe & Co., Klosterberg 27, Basel 10, 1946.

This textbook has for a long time been in use in Europe. The peripheral nerves are carefully traced anatomically and functionally from their first neuron to their final nerve ending. Included in this anatomic consideration are the cranial nerves and the autonomic nervous system. The final chapter is devoted to a discussion of lesions of the peripheral nerves, with which the authors have apparently had a wide experience. The entire text is well illustrated with excellent line drawings and photographs. There are two very clear schematic representations of the muscular supply by segments of the upper and lower extremities. For those to whom the reading of German literature is not a difficult problem, this book is recommended as a concise and carefully written consideration of the peripheral nerves.

Psychobiologic Foundations in Dentistry. By Edward J. Ryan, B.S., D.D.S. Fabrikoid. Price, $3. Pp. 131. Charles C Thomas, 301-327 E. Lawrence Ave., Springfield, Ill., 1946.

This is a very unusual book to come from the pen of a dentist. It is also unusual and delightful to follow the logical, forward thinking of a writer who is so modest that he states in the preface "This monograph on psychobiology in dentistry has many limitations, the chief one being the incompetence of the author." Every dentist and physician can read this book with interest and profit. It marks the beginning of a correlation of dentistry with psychosomatic medicine, and the author presents an excellent approach to the recognition that dentists can profit greatly through at least some understanding of the underlying dynamic psychology of his patients. The book is well written. It has a good index and an excellent bibliography.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

EXFOLIATIVE DERMATITIS FROM GOLD

To the Editor:—What treatment could be used for a generalized exfoliative dermatitis due to gold therapy? A white woman aged 36, suffering from chronic rheumatoid arthritis, was treated elsewhere by two doctors, one of whom used myochrisine and the other auro-thio-glyco-anilide. The patient stated she received numerous injections from each doctor but is unable to say how many. The exfoliative dermatitis began four months ago and affected the entire skin, including the scalp and the nails. Generalized desquamation occurred twice, but scales have reappeared on the scalp and the upper and lower extremities at least four times thus far. There is patchy discoloration (purplish brown) throughout except on the back, where it is solid rather than patchy. Borated glycerin and sodium bicarbonate baths partially relieve the intense itching. Petroleum partially relieves the excessive dryness of the skin. Protein powder and mixed vitamins were administered as adjunctive treatment. What further measures can you advise for the dryness, itching and recurrent scaling? Is it likely that the pigmentation noted will completely disappear?

M.D., West Virginia.

ANSWER.—British antilewisite (BAL) (Hynson, Westcott & Dunning) has been used in several cases of dermatitis due to gold with gratifying results. However, the number of cases is as yet too few to be conclusive and the response to BAL was most satisfactory when the rash had been present for less than two months. In 1 case in which the rash had been present for over three months, improvement following the use of BAL did not occur, since presumably after about three months the process tends to become irreversible. At present, with its apparent innocuousness, BAL should be tried. BAL is prepared as a 10 per cent solution and for a person weighing 150 pounds (68 Kg.) the dose has been 150 mg. (1.5 cc.) five times a day for one day, four times a day for two days and three times a day for three days. This should be given deep intramuscularly. Toxic symptoms consist of nausea and vomiting, fibrillary twitchings and salivation. If these appear, the next dose should be omitted. When BAL is effective the pruritus usually stops within twenty-four hours of the institution of treatment. If the pruritus is not affected by BAL, radiotherapy can be tried and is helpful at times. For local application, petrolatum ointment with 1 per cent phenol can be used and is apparently not harmful. It is unlikely that the pigmentation will completely disappear within five or ten years.

Further information may be found in the item entitled "Exfoliative Dermatitis After Chrysotherapy" in Queries and Minor Notes, THE JOURNAL, Feb. 15, 1947, page 507. Three original articles on this subject will appear in THE JOURNAL at an early date.

DDT FOR PEDICULOSIS

To the Editor:—I am requesting information relative to the use of DDT powder in treating pediculosis in children. On a number of occasions public health nurses have asked about the use of DDT powder in such cases. I consulted the California State Department of Public Health and was advised to wait until the use is standardized and the product more available. The Chemurgic Company of Richmond, Calif., sent a sample of the DDT powder, 10 per cent in talcum, to one of our branch offices, to the district public health nurse who wants to know about its use in pediculosis treatment. I will appreciate any information relative to the use of this powder for pediculosis specifically and also other uses.

Hilda Schneider, R.N., Redwood City, Calif.

ANSWER.—DDT powder, a mixture of DDT with an inert diluent such as talc or pyrophyllite, is highly effective against head lice. The effectiveness of different concentrations of DDT in powder form against head lice has not been completely investigated. However, a sufficient number of naturally infested cases have been treated to show that one thorough application of a powder containing 10 per cent of DDT will completely eradicate an infestation. A powder containing as low as 0.25 per cent of DDT will completely eradicate the lice, but this low concentration is effective for only a short time. It is suggested that the amount of DDT in the preparation used be at least 5 per cent.

Since DDT will not kill or remove the nits (eggs), the powder should be allowed to remain in the hair for approximately ten days so that it will kill the hatching nymphs and also protect against reinfestation from other sources during and after the delousing period. Viable nits or live lice that are often scattered about the home may serve as a source of reinfestation. Although DDT powder does not appear to be toxic to man, the eyes of the patient being treated should be covered.

Solutions or emulsions of DDT also have given excellent results against head lice. These preparations should contain at least 1 to 2 per cent of DDT and should be used with caution, since DDT in this form is much more toxic to man than it is in powder form; however, solutions have been used extensively by the military services without any injuries. Directions for use are the same as those mentioned for the DDT powder. One application should be sufficient if the material is not removed from the hair. A paper on the use of solutions and emulsions is to be published in the *Journal of Investigative Dermatology.*

Ten per cent of DDT in talc or pyrophyllite can also be used effectively against pubic lice. The powder should be applied to all hairy portions of the body and rubbed in thoroughly. The treatment should be allowed to remain on for twenty-four to forty-eight hours. Since DDT is not ovicidal, a second application seven to ten days after the first is necessary.

VERRUCA PLANA JUVENILIS

To the Editor:—A white woman aged 32 has had juvenile verrucae involving the face, hands and forearm for the past four years. During that time competent dermatologists have treated her with bismuth compounds intramuscularly without success. One week ago the warts became elevated, painful, itchy and red. The patient is allergic to shellfish, but this has been eliminated from the diet. Sodium bismuth triglycollamate 40 mg. three times daily is being given by mouth and zinc oxide ointment locally without relief. What suggestions can be offered as to further therapy directed both toward alleviating the painful itching and toward eradicating the warts?

M.D., Pennsylvania.

ANSWER.—Verruca plana juvenilis is most common on the hands and face in children. Occasionally the disease occurs in young adults. Its response to therapy is capricious. The same remedies may be met in some cases by extreme stubbornness and in others by successful results. Unlike that of most other warts proper treatment is with systemic measures, unless the manifestations are several lesions only. Inorganic arsenic such as solution of potassium arsenite or the Asiatic pill, mercury and bismuth have all been successful. Locally sulfur is recommended. Solution of sulfurated lime, or Vleminckx's solution, is a convenient form to employ. Wet dressings in the strength of 1 to 5 per cent or painted on 25 to 100 per cent are at times successful. X-rays sometimes are highly successful. One-fourth unit at weekly intervals for six treatments may be used. If not successful, more than this number is not apt to do more good. The lesions not infrequently may show signs of irritation and activation prior to involution. This may be the condition in the case described in the query.

TREATMENT OF POSTHERPETIC PAIN

To the Editor:—A patient had severe herpes zoster three months ago which extended around the chest at the level of the tip of the scapula. The patient continues to have severe pain. Please discuss treatment.

H. A. Amesbury, M.D., Clinton, Iowa.

ANSWER.—The treatment of chronic postherpetic pain is usually unsatisfactory. Before radical therapy is advised, the following measures may be tried in the order recommended: (1) posterior pituitary injection once or twice in twenty-four hours, (2) quinine hydrochloride as tolerated, (3) two intravenous injections of sodium salicylate, (4) 150 mg of thiamine hydrochloride hypodermically three times a week for at least four weeks and (5) cobra snake venom.

If these measures fail, the patient should be referred to a neurologic surgeon, who may do a root resection on the side of the involved area.

TRICHOMONAS PROSTATITIS

To the Editor:—A man aged 45 had gonorrhea seventeen years ago which was cured. One year ago he noted the appearance of a small amount of pus from the urethra in the morning only. This has not caused any discomfort. Many trichomonads were found in the pus but no gonococci. The patient was given 500,000 units penicillin in five doses at two hour intervals without improvement. Please discuss further treatment.

M.D., Minnesota.

ANSWER.—Before treatment is instituted a diagnosis should be established. A chronically infected prostate may harbor the trichomonads, or urethral strictures may cause the infection to persist.

Urethral irrigations with acriflavine and acetarsone by mouth are adjuncts to routine treatment in trichomonas infestation of the male lower urogenital tract.

Treatment also must include the cure of Trichomonas vaginalis of the sexual partner to preclude reinfection.

MALE HORMONE THERAPY IN CANCER

To the Editor:—A woman aged 42 had a radical mastectomy two and a half years ago with microscopic report of duct cell carcinoma with scirrhous change followed by intensive x-ray therapy of the chest. Following an attack of virus pneumonia three months ago the patient continued to have severe shortness of breath, and serial x-rays reveal pulmonary involvement of a fine infiltrating mass with nodules over the left lung; the infiltration has penetrated both lung areas, especially at the bases. X-rays of the skull reveal two areas of decalcification the size of a 25 cent piece believed to be metastatic. Assuming these to be metastatic lesions secondary to carcinoma of the breast, the patient is now receiving 75 mg. of testosterone propionate daily for thirty days, after which it is hoped to treat her symptomatically. The patient is now ambulatory, has gained 12 pounds (5.4 Kg.) and the present complaint is slight weakness and shortness of breath. What is the effect of androgen on regression of cancer tissue when it involves bone and lungs with high dosages? (The sedimentation rate is 25 and blood calcium 7.5.) What are the indications for repeating endocrine therapy? Will permanent sterility result from the dosage given? To date the menses have been extremely regular, but since the beginning of therapy one week ago the present period has been delayed and altered. Is therapy to be followed for relief of pain when metastasis to the long bones is detected (none at present) other than morphine? The high dosage being used was recommended by a prominent breast specialist associated with the Memorial Hospital of New York, and it is assumed that this form of therapy is now being used at that institution. It is planned to submit the patient to further x-ray therapy to the chest and possibly the skull, even though symptoms are not present.

M.D., New York.

Answer.—From the evidence available it appears that large amounts of testosterone propionate may in some instances produce a deposition of calcium in osseous metastases secondary to carcinoma of the female breast. Concomitant with this change in the character of the metastases is an amelioration of the pain. If the pain recurs after cessation of this therapy, relief may sometimes be obtained by the further administration of androgens. There is no conclusive evidence as yet that pulmonary metastasis is influenced by this method of treatment. A temporary amenorrhea is produced by androgen therapy. The usual method for controlling pain due to osseous metastases is to employ high voltage irradiation at the site of the lesions. The value of x-ray therapy in metastatic pulmonary disease and in asymptomatic osseous lesions is extremely doubtful.

SAFE LEVEL OF FLUORINE IN WATER

To the Editor:—What injurious results can be anticipated from prolonged exclusive use of drinking water containing 0.5 part per million of fluorine? Water intake is necessarily high in this arid climate—probably four times the average.

Gordon F. Helsley, M.D., Dealth Valley, Calif.

Answer.—Under ordinary conditions injurious results should not follow the exclusive use of domestic waters containing 0.5 parts per million of fluoride. In instances of an unusually high intake due to climatic conditions, some of the minor manifestations of endemic dental fluorosis might be expected to show. If the water intake is approximately four times the average consumption, one might expect effects somewhat comparable to those now present at Galesburg, Ill., or at Elmhurst, Ill. (1.8-1.9 parts per million of fluoride). An examination of the permanent teeth of a number of children who have used the water in question exclusively should quickly disclose whether or not this water is producing any untoward dental effects. In the absence of pronounced dental manifestations, nondental systemic effects would not be anticipated. At low levels of fluoride intake urinary excretion (and under high temperature conditions an additional significant elimination of fluorine in perspiration) seemingly maintains a state of fluorine equilibrium in the human organism.

ISOPROPYL ALCOHOL FOR STERILIZATION OF METAL INSTRUMENTS

To the Editor:—In view of the shortage of ethyl alcohol, I should like to know if isopropyl alcohol is just as effective for purposes of sterilization of metal instruments. What percentage by weight or by volume would be required? The medicated ethyl alcohols on the market are either highly perfumed or contain ingredients which are sometimes irritating or have an unpleasant odor.

E. William Abramowitz, M.D., New York.

Answer.—Isopropyl alcohol is a somewhat stronger germicide against vegetative forms than is ethyl alcohol. In addition it has advantages of lower surface tension and greater fat solvent action. The maximum bactericidal concentration of isopropyl alcohol is full strength, as compared with a maximum bactericidal concentration of 70 per cent by weight for ethyl alcohol. The best grades of commercial isopropyl alcohol are said to be 98 to 99 per cent. The small water content of these solutions renders them less corrosive for metal instruments than the 70 per cent ethyl alcohol solution.

Unfortunately, however, neither ethyl nor isopropyl alcohol can be depended on to kill spores. Brewer (The Journal, May 20, 1939, p. 2009) has shown that scalpels are frequently contaminated with sporulating pathogenic micro-organisms. That is probably true also of needles, scissors and other instruments which come into contact with skin. Immersion in isopropyl alcohol for several hours or even several days is not a trustworthy method of sterilizing such instruments.

Isopropyl alcohol is sold at present in unadulterated form, which is not irritating to the operator's hands or patient's skin.

SUGAR AND DIABETES

To the Editor:—A recent questionnaire in the *Reader's Digest* included this question and answer: "Does the excessive use of sugar—glucose—cause diabetes? Answer: No. Diabetes is a glandular disease and has no relation to excessive ingestion of sugar." Is this statement correct?

Riley Shrum, M.D., Huntington Park, Calif.

Answer.—Practically all authorities agree that excessive ingestion of sugar does not cause diabetes mellitus. As the question in the *Reader's Digest* specifically says "cause diabetes," the answer "No" is correct. Excessive intake of sugar may act as a precipitating factor but not as a primary cause. It is an important factor in the control of diabetes, of course, but, just as increased sugar supply does not cause diabetes, neither does reduction in sugar supply ordinarily cure the disease. In both instances the sugar supply merely brings into the open or else conceals the glycosuria and hyperglycemia which characterize the disorder.

BOROWSKAJA METHOD FOR COLLOIDAL GOLD LIVER FUNCTION TEST

To the Editor:—In doing the colloidal gold (Lange's) test on blood serum for diagnosis in hepatic disorders could the "Borowskaja" modification of colloidal gold be used with the same degree of sensitivity as the method described by Dr. Gray at the University of Chicago?

Clifford W. Atherton, M.D., Stambaugh, Mich.

Anwer.—The sensitivity of colloidal gold precipitation as a test for hepatic disorders is partially dependent on the p_H of the gold sol. "Borowskaja's" method of preparing colloidal gold could probably be used, provided the p_H is adjusted to 7.12 as described by Gray (*Proc. Soc. Exper. Biol. & Med.* **41**:470 [June] 1939) before use each time. In addition, one should carry out control determinations on the serums of normal persons with each batch of colloidal gold.

REMOVAL OF PICRIC STAIN OF HAIR

To the Editor:—A patient used butesin picrate ointment for treatment of a wound in her scalp, and her hair became colored by the picric acid. Is there any method of removing this ugly yellow stain?

Rudolf Wolff, M.D., Mill Valley, Calif.

Answer.—Picric acid is soluble to the extent of 1 Gm. in 12 cc. of alcohol or in 10 cc. of benzene. First, one should attempt to wash out as much of the picric acid as possible by either one of these agents. The picric acid may have combined with the material in the hair to form a protein picrate. It is possible that washing the affected area with a weak alkali, such as sodium bicarbonate solution, will break this bond and remove the picric acid stain.

DANDRUFF

To the Editor:—1. Is ordinary dandruff without apparent scalp disease or symptoms, except the appearance of dandruff on the clothing, a physiologic or pathologic condition? 2. Does it lead or predispose to baldness? 3. Is there any effective treatment to prevent it?

Charles C. Joyce, M.D., Middleboro, Mass.

Answer.—1. Dandruff is generally considered a pathologic condition.

2. Most textbooks state that dandruff predisposes to baldness.

3. There are numerous medicaments and formulas which have been recommended. Sulfur, the mercurials and resorcin have been the most popular for topical applications. They are generally effective but must be used for a prolonged period. Shampoos at appropriate intervals are helpful and important in maintaining proper hygiene of the scalp.

COWPER'S AND BARTHOLIN'S GLANDS

To the Editor:—In the answer to the query "Analogy of Cowper's and Bartholin's Gland" (*The Journal*, Sept. 21, 1946, p. 1045) it is stated that the "strict analogy of these glands may be questioned," since "little is known of the functions of Bartholin's gland and not much more concerning the function of Cowper's gland." I want to stress the fact that the analogy is not only embryologic but also physiologic. Both are sex glands. Bartholin's gland provides the lubricating material necessary for the sexual act, while Cowper's gland participates in the formation of the semen and also lubricates the mucous membrane of the male urethra.

S. I. Movitt, M.D., Los Angeles.

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PROLONGED LABOR, WITH SPECIAL REFERENCE TO POSTPARTUM HEMORRHAGE

L. D. ODELL, M.D.
J. H. RANDALL, M.D.
and
G. W. SCOTT, M.D.
Iowa City

Prolongation of labor beyond the commonly accepted normal maximum of thirty hours is not only a trying experience for the patient and her family (and for the obstetrician) but also imposes certain considerable maternal and infantile risks. In the child, recent investigations[1] emphasize the frequency of death from bacteremia and pneumonia; and in the mother, the course of events may lead to intrapartum fever, shock, sepsis and, sometimes, a fatality.[2] The chief of these complications, which is related to the increased danger of intrauterine infection, especially with early rupture of the membranes, has been discussed elsewhere.[1c] In the course of that study it became apparent that postpartum hemorrhage was more frequent than usual following prolonged labor. This prompted the present investigation.

By definition, a labor lasting thirty hours or more is designated "prolonged," one that terminates within three hours is "precipitate" and the remainder are "normal" so far as duration is concerned. When the total loss of blood (measured and estimated) is 600 cc. or more, postpartum hemorrhage is diagnosed.

Among 15,824 consecutive deliveries from July 1, 1926 through June 30, 1942 there were 422 prolonged labors, an incidence of 2.7 per cent (table 1). As might be anticipated, primigravidas were in the majority (66.9 per cent), although the usual ratio in this clinic favors multiparas three to one. By comparison, the incidence of operative delivery and postpartum fever was high, 29.3 and 25.5 per cent, respectively. There were 3 mothers (0.7 per cent) and 44 infants[3] (10.4 per cent) who did not survive. The infantile fatalities were largely due to intracranial hemorrhage incident to the operative delivery, infection and prematurity (table 2). The 3 adult deaths were attributed to puerperal infection rather than to hemorrhage. Two patients died from peritonitis and 1 from embolism on the thirty-first postpartum day. (See the addendums of maternal deaths.)

Premature rupture of the membranes, implicated as a cause of prolonged labor,[4] occurred in 30 per cent of these patients (table 3). In the majority of cases, artificial rupture was performed as an adjunct to induction of labor. Moreover, the relatively low incidence of prolonged labor (2.7 per cent) compares favorably with the 9.0 per cent reported elsewhere[1a] and suggests, at least, that premature artificial rupture of the membranes does not cause protracted labor.

It is generally accepted that the principal causes of prolonged labor are cephalopelvic disproportion which is unrecognized until dystocia becomes apparent, abnormal fetal presentations and uterine inertia. In this series (table 3) there were only 26 pelves (6.2 per cent) that were classified as abnormal and 31 patients (7.3 per cent) in whom the fetal presentation was other than occipital. In addition, the distribution of infants' weights, as compared with "normal" labor, was within the usual limits. It is then obvious that these first two etiologic factors account at most for only 1 of 7 prolonged labors. Most of the remainder must be included in the last, or inertia, group.

Uterine inertia is at best a poorly understood abnormality of the uterine muscular function in which both myometrial contraction and retraction are at fault. The modern concept of uterine physiology during labor associates cervical effacement and dilatation largely with retraction of the lower, passive, segment and expulsion with contraction of the upper, or corporeal, portion of the uterus;[5] but it is probable that synchronization of the two types of muscular activity is essential for the normal birth process. Prolongation of labor is usually due to lengthening of the first stage and, therefore, presumably to lack of proper retraction of the lower segment.

The tocographic observations of Murphy[6] (charts 1, 2 and 3) indicate that first stage uterine inertia is associated with detectable alterations in the size and rhythmicity of the contractions of the corpus, which vary in intensity and tend to be irregular. This suggests either an abnormality of innervation or a failure of proper muscular response. Physiologically, a nerve

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From the Department of Obstetrics and Gynecology, State University of Iowa College of Medicine.

Read before the Section on Obstetrics and Gynecology at the Ninety-Fifth Annual Session of the American Medical Association, San Francisco, July 3, 1946.

[1] (*a*) Douglas, R. G., and Stander, H. J.: Am. J. Obst. & Gynec. **46**: 1-19 (July) 1943. (*b*) Potter, E. L.: Postmortem Examination of Stillborn and of Newly Born Infants, Arch. Path. **25**: 607-636 (May) 1938. (*c*) Odell, L. D., and Plass, E. D.: Am. J. Obst. & Gynec. **52**: 89-99 (July) 1946.

[2] Pride, W. T.; Reinberger, J. R., and Holland, D. T.: Am. J. Obst. & Gynec. **35**: 793-801 (May) 1935; **41**: 412-416 (March) 1941. Hillis, D. S., in Proceedings of Second American Congress on Obstetrics and Gynecology, Portland, Ore., Western Journal of Surgery Publishing Co., 1943. Odell.[1c]

[3] Twenty-nine stillbirths and 15 neonatal deaths.

[4] Grieg, D. S.: J. Obst. & Gynaec. Brit. Emp. **50**: 337-346 (Oct.) 1943.

[5] Danforth, D. N.; Graham, R. J., and Ivy, A. C.: Surg., Gynec. & Obst. **74**: 188-203 (Jan.) 1942.

[6] Murphy, D. P.: Surg., Gynec. & Obst. **78**: 207-212 (Feb.) 1944.

impulse sufficient to cause a contraction in either smooth or striated muscle produces an all-out response (the "all or none" law). The innervation of the uterus is derived from the antagonistic sympathetic and parasympathetic systems, with the former causing contraction and vasoconstriction and the latter, relaxation and vasodilatation, and from the cerebrospinal system. Moreover, the uterine muscle is arranged in many fasciculi, each with its supplying nerves and presumably with its nervous threshold. Inertia, then, may well represent a condition in which the uterus does not contract harmoniously, so that contraction (isometric action) does not proceed simultaneously with retraction (isotonic action).

Table 1.—*General Data on Prolonged Labor*

	No.	%
Total deliveries	15,824	
Prolonged labors	422	2.7
Primiparity	283	66.9
Operative delivery	124	29.3
Febrile puerperium *	108	25.5
Maternal deaths	3	0.7
Infant deaths	44	10.4

* American Committee on Maternal Welfare Standard.

Table 2.—*Prolonged Labor*

	No.
Causes of death in thirty-one infants (autopsy findings)	
Birth trauma	12
Infection (intrapartum fever)	11
Congenital abnormalities	3
Prematurity	4
Erythroblastosis fetalis	1
Total	31
Causes of death in thirteen additional infants (clinical diagnosis)	
Diarrhea	1
Suspected birth trauma	6
Unclassified	6
Total	13
Grand total	44

Table 3.—*Prolonged Labor According to Pelvis, Fetal Position and Time of Rupture of Membranes*

	Patients	
	No.	%
Pelvis		
Normal	396	94.0
Funnel	10	2.3
Simple flat	9	2.1
Generally contracted	5	1.2
Other	2	0.4
	422	
Position and presentation		
Occiput, anterior and transverse	316	75.1
Occiput, posterior	75	17.7
Breech	24	5.7
Face	2	0.4
Transverse and compound	5	1.2
	422	
Time of rupture of membranes		
Premature *	127	30.0
Early †	89	21.1
Late	196	46.5
Unknown	10	2.3
	422	

* Before onset of labor.
† After onset of labor but before cervix is dilated 5 cm.

Obstetricians have long recognized the effect of extraneous factors on uterine activity and have believed that the emotions (fear, grief and the like) have a definite effect on the contractions of the organ. Until more is known of the psychosomatic relationship, the etiology of uterine inertia may well be incomplete.

Contraction and retraction evidently combine to produce placental separation and expulsion from the uterus, with contraction seemingly carrying the major burden. Recently, doubt has been directed toward the older observation that administration of oxytocics promotes a much earlier separation of the placenta.[7] Subsequent to birth of the presenting part a solution of either posterior pituitary injection, ergonovine maleate or isotonic sodium chloride solution was administered intravenously and delivery was completed by physiologic uterine expulsion. Although excessive loss of blood was more frequent in those receiving isotonic sodium chloride solution, separation occurred within three minutes in a relatively equal percentage of each group[8] (table 4).

Table 4.—*Effect of Oxytocics, Isotonic Sodium Chloride Solution and Slow Expulsion on Duration of Third Stage (Courtesy of Dieckmann)*

Agent Injected	Duration of Third Stage in Percentage			Total Percentage Under 3 Min.
	1 Min.	2 Min.	3 Min.	
Ergonovine maleate 1 cc.				
Anterior shoulder	46	23	23	92
After second stage	6	42	30	78
Posterior pituitary injection, 0.2 cc.				
Anterior shoulder	29	38	16	83
After second stage	13	41	28	82
Isotonic sodium chloride solution, 1 cc.				
Anterior shoulder	7	36	18	61
Posterior pituitary injection, 0.1 cc.				
Slow expulsion	53	24	12	89

Table 5.—*Postpartum Hemorrhage According to Duration of Labor*

	Total	Patients with Hemorrhage	
		No.	%
Normal labor (3 to 30 hours)	13,583	580	4.3
Precipitate (under 3 hours)	1,819	97	5.3
Prolonged (over 30 hours)			
Operative	123	13	10.5 } 7.6
Spontaneous	299	19	6.4 }
Total	15,824	709	4.5

There can be little doubt that retraction, especially of the innermost muscular layers just beneath the decidua, is important in controlling postpartum blood loss. The separation of the placenta from the uterine wall entails the tearing across of many vessels whose ends are left open. In the normal case, there is little hemorrhage because further retraction of the uterus causes a muscular closure of the large sinuses of the uterine wall. Contraction of the remainder of the muscle undoubtedly helps by producing periodic uterine ischemia. *It is a common observation in patients with* unusual loss of blood that recurrent contractions expel blood which has accumulated in the uterine cavity during periods of relaxation, whereas under normal conditions of proper retraction such bleeding is barely noticeable.

This isotonicity of uterine muscle aids in the formation of thrombi. Although it is often difficult to outline the placental site in the immediate puerperium (digital examination), subsequent palpation (eight hours after delivery) will disclose a raised, firm plaque. Moreover, histologic examination of this area shows thrombi within venous sinuses as well as sclerotic thickening, obliteration and thromboses of the spiral artery tips.[9] In the final analysis, the control of bleeding rests in the formation, maintenance and organization of these clots, and any disturbance in this mechanism can precipitate an abnormal loss of blood.

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[7] Davis, M. E., and Boynton, M. W.: Am. J. Obst. & Gynec. **43**: 775-787 (May) 1942.
[8] Dieckmann, W. J.: Personal communication to the authors.

It is extremely difficult to evaluate the importance of idiopathic uterine atony in the postpartum loss of blood among patients with prolonged labor. Our figures (table 5) indicate that postpartum hemorrhage occurred in 7.6 per cent of this group as against 4.3 per cent in those women with labors of "normal" duration, but this difference is more apparent than real. Various other factors, such as the duration and depth of anesthesia and the agent employed, the type and difficulty of operative delivery and the competence of the attendant in managing the third stage and early postpartum period, are especially significant. The effect of the first two of these is indicated by the fact that among the 123 operative deliveries there were 13 postpartum hemorrhages (10.5 per cent), while the incidence fell to 6.4 per cent in those delivered spontaneously. Thus, even after largely discounting the trauma of operation and the effect of more prolonged and deeper anesthesia, postpartum hemorrhage was 50 per cent more common among women who had prolonged labors but were spared these traumas than among those with labors of normal duration.

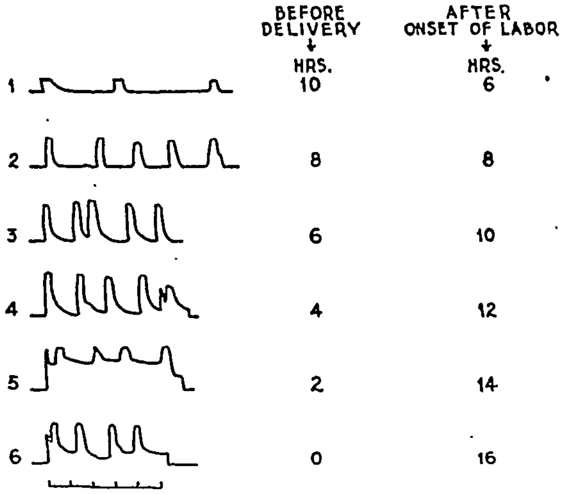

Chart 1.—Record of normal uterine contractions occurring in a labor of sixteen hours' duration; time interval, three minutes. Adapted from Murphy.

The effect of the third factor influencing loss of blood, the method of handling the placental stage of labor, is related to the experience of the operator. In our series the majority of uncomplicated labors were conducted by senior medical students and interns, who generally can be expected to encounter a higher incidence of postpartum hemorrhage than the resident and staff physicians who usually handle complicated cases. On this basis the hemorrhage incidence of 4.3 per cent after labors of normal length is higher than it should have been.

Such an analysis suggests that postpartum uterine atony leading to excessive loss of blood is perhaps twice as common in women who have exhibited inertia leading to the prolongation of parturition as in those whose uterine function is not thus disturbed. The surprising fact is not that the inertia should occasionally carry over to the postpartum period but rather that so many uteri which show defective first and second stage muscular activity should be able to exhibit proper contraction and retraction after expulsion of the fetus.

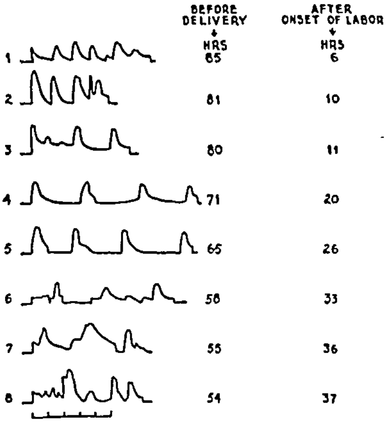

Chart 2.—Record of normal uterine contractions observed during labor of ninety-one hours' duration; time interval, three minutes. Delay in delivery was due to disproportion. Adapted from Murphy.

It has also been suggested that unusually rapid labors (under three hours' duration) may likewise be associated with postpartum hemorrhage because of incomplete retraction of the uterine muscle.[10] In such cases it is obvious that lower segment retraction, as demonstrated by the rapidity of cervical effacement and dilation, has kept pace with the strong upper segment contractions and that atonic postpartum bleeding must be attributed to failure of the subendometrial muscular layers to retract promptly. This variable response of two areas of the same organ is not inconceivable nor is the other possibility that muscular retraction involves a time element and that in precipitate labors a definite latent period imposes the risk of abnormal loss of blood. Our data (table 5) show a slight and probably insignificant increase in the incidence of postpartum hemorrhage in precipitate labors (5.3 per cent as against 4.3 per cent in "normal" labors).

As has been said, the cause of uterine atony is unknown despite many efforts to explain it. The vagaries of its occurrence, and especially the fact that ineffective or abnormally effective first and second stage contraction and retraction are generally followed by normal third stage and early postpartum activity, argue against disturbances of the hormonal or acid-base balance as etiologic factors. Such alterations could not logically explain the rapid change from

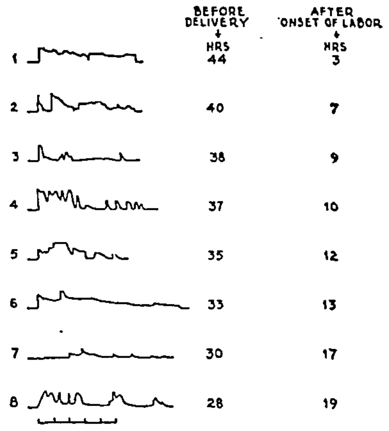

Chart 3.—Record of abnormal uterine contractions (inertia) throughout a labor of forty-seven hours' duration; time interval, three minutes. There was no evidence of disproportion. Adapted from Murphy.

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[9] Koff, A. K.: Personal communication to the authors.

[10] McCormick, C. O.: A Textbook on Pathology of Labor, the Puerperium and the Newborn, St. Louis, C. V. Mosby Company, 1944. Beck, A. C.: Obstetrical Practice, Baltimore, Williams & Wilkins Company, 1942.

abnormal to normal function seen so frequently after expulsion of the child.

Proper conduct of the third stage of labor, permitting the uterus to contract and retract normally, is probably the best prophylaxis against atonic hemorrhage, in spite of the fact that loss of blood can be reduced on the average by the early exhibition of oxytocic drugs. In the presence of atonic bleeding, massage and oxytocics generally produce adequate retraction. Intrauterine douches, preferably with cold, sterile water, and thorough tamponade of the uterine cavity will occasionally be demanded. Prompt restoration of the circulating blood volume, initially with isotonic solution of sodium chloride or dextrose solution or with plasma, and later with whole blood, is most effective in preventing or combating shock with its threat of death.

SUMMARY

In this series uterine inertia was the principal cause of prolonged labor, cephalopelvic disproportion and abnormal fetal presentation, accounting for only 13.5 per cent of the cases. Uterine contraction and retraction are vitally concerned with the length of labor, with spontaneous placental separation and with the physiologic control of bleeding from the puerperal uterus.

Postpartum hemorrhage was more frequent following prolonged labor. This increased tendency toward abnormal loss of blood was due largely to prolonged anesthesia and the trauma of operative delivery but after nonoperative deliveries was on the basis of postpartum uterine atony. Astute anticipation of this tendency to bleeding, with careful conduct of the third stage, early uterine massage and exhibition of oxytocic drugs, as well as the liberal and early use of fluids and whole blood when abnormal loss of blood occurs, is recommended for the prevention and control of hemorrhage and shock.

ADDENDUM OF MATERNAL DEATHS

CASE 1.—A woman aged 23, nullipara unigravida, was admitted several hours after a delivery which had been completed outside the clinic. After a seventy hour labor the patient had been delivered by a high forceps operation and transported 140 miles to the hospital. The symphysis pubis was separated, the bladder and urethra torn and pelvic tissues severely damaged. There had been no hemorrhage. Subsequent to admission her condition became progressively worse, and death occurred two days later. Autopsy was refused.

CASE 2.—N. C., a woman aged 23 years, nullipara unigravida, was admitted with a six months gestation for treatment of gonorrhea. Labor commenced spontaneously near term. After a seventy-seven hour labor a 2,700 Gm. male, living infant was delivered by low forceps. The blood loss was 300 cc. The puerperium was uncomplicated until the seventh day, when signs of a puerperal thrombophlebitis developed. Death occurred suddenly on the thirty-first postpartum day. Autopsy confirmed a diagnosis of death from pulmonary embolus.

CASE 3.—R. S., a woman aged 21, bipara multigravida, was admitted at term. After artificial rupture of the membranes, medical induction of labor and twenty-four hours of labor a transverse presentation was recognized. Attempts at correction failed. After fifty hours of labor a Porro's cesarean section was performed. The loss of blood was minimal. However, a dehiscence of the abdominal wound occurred on the fifth postoperative day. During the secondary closure a generalized peritonitis was recognized. Death occurred on the tenth postoperative day. Autopsy was refused.

ABSTRACT OF DISCUSSION

DR. DONALD A. DALLAS, San Francisco: Dr. Odell has shown clearly that postpartum hemorrhage in prolonged labor is more common than it is in normal. He has stated that postpartum hemorrhage in itself can cause maternal mortality and that it frequently contributes to the mortality caused by other conditions, such as puerperal infection. He attributes postpartum hemorrhage in prolonged labors to three main causes: prolonged deep anesthesia, trauma of operative delivery and uterine atony. In my opinion the uterine atony is far more important than the other two causes. There are available numerous methods of treatment to prevent postpartum hemorrhage. Far more important than these methods is the consciousness on the part of the attendant that the consequences of blood loss during and shortly after labor are serious, and it is true particularly in those patients who have undergone a prolonged labor. The third stage of labor has always been neglected both in medical schools and in textbooks. This lack of consciousness of the seriousness of loss of blood was beautifully illustrated on Monday morning here in San Francisco, when I took Dr. Odell to one of our teaching hospitals to show him the beautiful facilities available for teaching clinical obstetrics. We walked into a space behind the glass partition and looked into a beautifully equipped delivery room. On a complicated and elaborate table lay a recently delivered patient. A basin containing a placenta and about 500 or 600 cc. of blood stood on a table nearby. There were three interns in the delivery room. Two of them were holding an animated conversation and the third was occupied in instilling silver nitrate into the eyes of the newborn baby. While we stood there, watching, the patient on the table began to bleed profusely. None of the medical attendants noticed this hemorrhage, and it was only by violently rapping on the glass partition that we were able to call these doctors' attention to the fact that the patient was really bleeding profusely. All that was necessary to stop this hemorrhage was simple gentle massage of the uterus. One of the interns walked over and massaged the uterus gently, the uterus contracted and the bleeding ceased. I think it might not be too fantastic an idea to have medical schools install in their delivery rooms some kind of a device which would repeatedly call the attention of interns and medical students to the fact that blood must be conserved during the third stage of labor.

DR. PENDLETON TOMPKINS, San Francisco: Dr. Randall and Dr. Odell stated that the incidence of prolonged labor in their very large series was 2.7 per cent. The etiologic factors were an abnormal pelvis in 6 per cent, a faulty presentation in 6 per cent and uterine inertia in 87 per cent. They have well discussed the treatment, but little has been said about prevention. There is nothing which can be done to prevent a patient coming in with an abnormal pelvis. There is nothing the physician can do about faulty presentation except occasionally in breeches. But about inertia, there is a good deal that may be done. Careful estimation of uterine tone at the time of the onset of labor is often neglected. There are patients who have poor labors and patients who have good labors. The uterus is a muscle and its tone is proportional, roughly, to the tone of all the other muscles. It is therefore incumbent on the obstetrician in his prenatal care to try to develop in his patient good muscular tone throughout—in her intestinal tract, her skeletal muscles and her uterus. He may do this by making certain that the patient obtains a reasonable amount of exercise during pregnancy. The large clinic will have difficulty in evaluating the needs of each patient, because the patients are seen by different physicians at each visit. The private practitioner, on the other hand, knows his patient well. He sees her himself six or eight or ten times during the course of her pregnancy, and he is in a better position than even the well staffed clinic to advise his patient regarding exercise and rest. He is also in a position to initiate labor at the optimum time. He will not induce labor too soon, if he induces it at all, and when the patient comes into the hospital he can evaluate the fatigue which his patient has already experienced during the preceding hours. Psychosomatic influences play a large part in the course of labor. By alleviating fear the private practitioner can do more to avoid inertia of the uterus than by any other means. He must counteract also the effect that fearmongers have on patients, mothers who tell their daughters of their own difficult labors, neighbors who tell of their troubles. He must encourage his patients, to assure them that progress is normal, that he fears no difficulty. Many of Dr. Randall's and Dr. Odell's patients are admitted to the hospital some days before pregnancy reaches term. They wait in the hospital. They become weary and overanxious, and their labors are poor partly for that reason.

Dr. J. L. Bubis, Cleveland: This question of postpartum hemorrhage is very important. Every institution has its own method of taking care of these cases. In the university, where there is a student body, they naturally are more conservative than in the private institutions. When students are watching patients in labor over thirty hours, it is important to give the expectant mother plenty of fluids and sedation. If there is a moderate or borderline dystocia, it is important to wait until the cervix is dilated or dilatable. Those who have watched Potter deliver by dilating the perineum and the cervix followed by a version and extraction have seen that his patients have come through in much better shape than others because they have not had this fear of a prolonged labor and that they were in better physical condition because their labors had been shortened. One of the best procedures in the prevention of postpartum hemorrhage, after the fetus is delivered, is the injection of Pitocin directly into the vein or intramuscularly or into the solution as it is given to these patients. The uterus must be grasped and held firmly and watched for an hour after the delivery and repair. If that does not help, the uterine cavity is swabbed out with a sponge dipped in iodine solution and at the same time counter pressure is maintained on the fundus. Frequently pieces of placenta, membranes and blood clots are wiped out, the uterus contracts and the bleeding then stops.

Dr. Lester D. Odell, Iowa City: In this series there were no maternal deaths which could be attributed to hemorrhage. In fact, the loss of blood was relatively insignificant in each fatality. This probably represents a unique occurrence, since most recent studies list hemorrhage as a leading cause of maternal death.

We agree with Dr. Dallas in that uterine atony is probably the principal cause of hemorrhage following prolonged labor. In this series there was a progressive coincrease in the incidence of operative delivery and blood loss up to 600 cc. But above that amount the rate of operative delivery declined, suggesting that uterine atony became a prime cause for bleeding.

Dr. Tompkins' remarks on the psychosomatic aspects of prolonged labor are pertinent. His outline of treatment at the University of Iowa was correct. However, we do take some pains to improve the general morale of our patients. But they are away from home and are on a charity status. Consequently, their mental attitude cannot be compared to that of private patients.

At the University Hospitals the management of patients with prolonged labor has been individualized. If compared with that in some other clinics it could be called conservative. Intravenous fluids, morphine, supportive nursing and antibiotics in the presence of real or threatened infection constitute what we consider to be intelligent therapy. Hypophamine drugs are not used to hasten labor or to treat uterine inertia. We do do not employ the word "dilatable" since it is not considered to be physiologic. Furthermore, cervical incisions, difficult forceps operations and cesarean hysterectomy are used only for strictly maternal indications. Consequently, the infant mortality rate of 10.4 per cent is probably high; high out of consideration for maternal life, morbidity and future health.

FOLIC ACID IN PERNICIOUS ANEMIA

Failure to Prevent Neurologic Relapse

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The ability of synthetic pteroylglutamic (folic) acid to induce hematologic remissions in patients with macrocytic anemia associated with megaloblastic hyperplasia of the bone marrow has been well established. A recent review by Berry and Spies[1] covers the subject adequately.

While the results of treatment with folic acid appeared to be similar to or identical with those of treatment with purified extracts of liver, it was recognized[2] that a considerable period of study would be necessary to ascertain whether folic acid would be as effective as extracts of liver in the maintenance of remission. In pernicious anemia it was also of importance to determine whether folic acid would cause arrest of neurologic lesions as effectively as do extracts of liver.

Recent reports[3] have indicated that in some patients with pernicious anemia there develops decided progression of neurologic lesions while they are being maintained on folic acid. The following case is presented in some detail because (1) the neurologic relapse was unusually "explosive" and rapidly progressive and (2) it occurred after the blood had reached and remained at normal levels, including the absence of macrocytosis.

REPORT OF A CASE

O. K., a white man aged 68, was admitted to the Lakeside Hospital complaining of weakness and indigestion. He had had angina pectoris for one year and had been hospitalized about a year before, at which time a diagnosis of coronary thrombosis was made. Since that time he had experienced progressive weakness, burning of the mouth and gums, slight numbness of the hands and inability to distinguish accurately the size of objects placed in his hands. He had also had nausea, indigestion and a bitter taste in his mouth, and frequently he had noted dizziness. There had been a loss of weight of 30 pounds (13.6 Kg.) in the last three months, and it was observed that the skin had assumed a yellow color.

Examination revealed little or no atrophy of the lingual papillae. The skin was a pale, lemon-yellow color. The liver was palpable about 3 cm. below the costal margin in the right midclavicular line. The knee and ankle jerks were absent bilaterally, but other deep reflexes were present, equal and normally active. There was a slight diminution in the vibratory sensation in the right leg below the knee, but it was normal elsewhere. The Romberg sign was absent, and position sense was intact.

Laboratory examination revealed the presence of a macrocytic anemia. The blood findings on admission were: erythrocytes, 1,590,000 per cubic millimeter; hemoglobin, 5.1 Gm. per hundred cubic centimeters; leukocytes, 4,850 per cubic millimeter; hematocrit reading, 17.5; mean corpuscular volume, 110 cubic microns; mean corpuscular hemoglobin, 32 micromicrograms, and mean corpuscular hemoglobin concentration, 28.2 per cent. The differential blood count revealed 43.0 per cent neutrophils, 1.5 per cent eosinophils, 0.5 per cent basophils, 0.5 per cent unsegmented neutrophils, 43.0 per cent lymphocytes and 11.5

This report is part of a study of folic acid aided by a grant from the United States Public Health Service.

From the departments of Medicine and Pharmacology, Western Reserve University School of Medicine, and the Lakeside Hospital.

[1] Berry, L. J., and Spies, T. D.: The Present Status of Folic Acid, Blood **1**: 271 (July) 1946.

[2] Folic Acid, editorial, Blood **1**: 357 (July) 1946.

[3] (*a*) Vilter, C. F.; Vilter, R. W., and Spies, T. D.: The Occurrence of Combined System Disease in Persons with Pernicious Anemia During Treatment with the L. Casei Factor (Folic Acid), Proc. Central Soc. Clin. Research **19**: 26 (Nov.) 1946. (*b*) Meyer, L. M.: Folic Acid in the Treatment of Pernicious Anemia, Blood **2**: 50 (Jan.) 1947.

per cent monocytes. Many of the neutrophils contained highly segmented nuclei. The erythrocytes showed decided variation in size and shape and were macrocytic. Two normoblasts were seen while counting 200 leukocytes. The blood platelets were slightly reduced in number.

Gastric analysis showed absence of free hydrochloric acid after the subcutaneous administration of 1.0 mg. of histamine. The icterus index was 8 units. Serum bilirubin was less than 2.5 mg. per hundred cubic centimeters, and the van den Bergh reaction was positive direct.

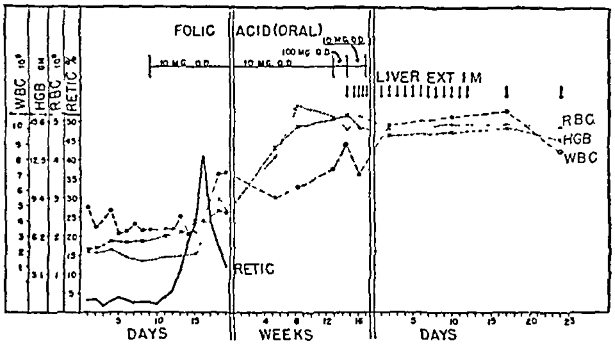
Sternal marrow aspiration was performed, and a well defined megaloblastic hyperplasia was found.

In view of these observations a diagnosis of addisonian pernicious anemia was made and treatment with synthetic folic acid [4] in daily oral doses of 10 mg. was started.

From the accompanying chart it can be seen that a reticulocyte response of 40.6 per cent occurred on the seventh day of treatment and was followed by a satisfactory increase in erythrocytes, hemoglobin and platelets (not charted). Sixty-one days after the start of therapy the erythrocyte count was 5,400,000 per cubic millimeter and the hemoglobin level was 15.1 Gm. per hundred cubic centimeters.

Coincident with the hematologic improvement there was an associated sense of well-being and a definite increase in appetite and general strength. The neurologic symptoms, which had never been pronounced, did not change.

At the time we first saw this patient he had only four teeth, the remainder having been extracted over a period of one to two years. As a result of this, coupled with the naturally poor appetite commonly found in patients with untreated pernicious anemia, his diet had been limited. The intake of food was necessarily restricted to soft and liquid foods even after the remarkable increase in appetite associated with the response to folic acid.



Hematologic data on patient O. K.

Seventy-nine days after the initiation of treatment the patient had the four remaining teeth extracted. Because of the resultant sore mouth and the total absence of teeth the dietary intake was further restricted and consisted entirely of soups, milk and fruit juices for several days. It should be emphasized that the appetite was excellent at this time, and the patient had a desire to eat. Within three or four days after the removal of the remaining teeth there was a sudden pronounced increase in numbness of the hands. In two weeks this had progressed to a point where his arms were completely numb from the elbows downward. The patient was unable to feel objects placed in his hands, even those as large as a pencil. He was totally unable to manipulate buttons, tie his necktie or perform similar actions. At this time there was no numbness in the lower extremities. Examination of the blood revealed: erythrocytes, 5,090,000 per cubic millimeter; hemoglobin, 15.9 Gm. per hundred cubic centimeters; hematocrit reading, 48; mean corpuscular volume, 94.5 cubic microns; mean corpuscular hemoglobin, 31.3 micromicrograms, and mean corpuscular hemoglobin concentration, 33.2 per cent.

The dosage of folic acid was increased to 100 mg. a day, but in ten days the paresthesias of the upper extremities were unrelieved, and the patient noted progressively increasing numbness of the feet. At this time the intramuscular injection of a solution of extract of liver was started, 15 units of purified liver extract (Lilly) [5] and 6 units of crude liver extract (Lilly, 2 units per 1 cc.) being given twice a week. The folic acid dosage was reduced to 10 mg. a day.

Sixteen days after the initiation of treatment with extract of liver the neurologic condition had deteriorated further. The patient felt numb from the hips downward and from the elbows downward. All the deep reflexes were now completely absent. Vibratory sensation was absent below the ribs. There were no pathologic reflexes present, and the heel to knee and finger to nose tests were performed accurately. Throughout this time the appetite remained excellent, the body weight was maintained and general strength was good. Folic acid therapy was discontinued at this time, and treatment with vitamin B complex was instituted (Becotin, Lilly, three capsules a day).

Twenty days after the first dose of liver extract severe lower abdominal pain suddenly developed, and the patient was readmitted to the hospital. He had slight fever for two days (maximum 38 C., 100.4 F.), and became decidedly jaundiced. The icterus index reached a maximal value of 90 units, and the serum amylase attained a level of 72.3 units. A diagnosis of acute pancreatitis was made. Roentgenologic examination of the gallbladder, made on the previous admission, had revealed normal function, and calculi had not been visualized. Within ten days there was recovery from this episode, and the icterus index and serum amylase values returned promptly to normal. During this hospital admission the patient was given daily intramuscular injections of 6 units of crude liver extract (Lilly, 2 units per 1 cc.) and the treatment with vitamin B complex was continued.

Twenty-seven days after the first dose of extract of liver and while the patient was still in the hospital, the first signs of improvement occurred when he noted a slight decrease in the numbness of his hands and was able to tie a bow in a cord. It should be observed that this improvement occurred despite the presence of an infection, pancreatitis. The patient was discharged from the hospital thirty-one days after receiving the first dose of extract of liver, and injections have since been given on a twice weekly basis. Examination thirty-five and forty-two days after the start of liver therapy revealed progressive improvement, in that the patient could tie his shoelaces and necktie and button his shirt. There was also progressive but not complete disappearance of numbness in the upper and lower extremities.

COMMENT

The neurologic relapse in this case occurred in a patient on folic acid therapy who had attained and maintained completely normal blood findings. It occurred suddenly, progressed rapidly and responded to liver therapy slowly. The patients described by Vilter and his associates [3a] likewise displayed sudden onset and rapid progression in their neurologic relapse.

To date we have treated and maintained 47 patients with pernicious anemia with synthetic folic acid for periods up to one year. Of this number, only 2 others in addition to the patient described have exhibited definite neurologic relapse. These relapses were mild and responded readily to therapy with extract of liver. This group of patients will be reported in a later publication.

In all 3 patients in whom neurologic relapse occurred the dietary intake was poor. In the patient described here, absence of teeth prevented normal dietary intake, as was noted before. The other 2 patients were women. One, aged 50, was a person of unstable temperament in whom emotional disturbances caused frequent nausea and vomiting, and who never had a robust appetite. The other, a woman aged 72, never had a good appetite, frequently ate only two meals a day and probably did not consume a fully balanced diet.

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[4] Synthetic folic acid was supplied through the courtesy of the Lederle Laboratories, Inc.

[5] Liver extracts of this type contain insignificant amounts of determinable folic acid.

The mechanism of the neurologic relapse occurring in this patient is not immediately obvious. The rather remote possibility exists that even larger doses of folic acid might have prevented or caused the disappearance of the symptoms. Neither we nor Vilter and his associates [8a] continued to give the larger doses of folic acid for more than forty days because rapid progression of symptoms during that time made standard effective treatment mandatory. Had such large doses been continued longer it is possible that folic acid alone might have controlled the neurologic relapse.

On the other hand, the "explosive" nature and rapid progression of the relapse occurring in this patient suggests that folic acid not only failed to prevent neurologic relapse in the dosage used but may even have precipitated it. If the hematologic and neurologic manifestations of pernicious anemia are due to deficiency of more than one substance, it is possible that alleviation of the hematologic deficiency with folic acid might precipitate the neurologic relapse as a manifestation of another deficiency not relieved by folic acid. Precipitation of signs of vitamin deficiency in persons deficient in more than one member of the vitamin B complex has been shown to occur when one of the needed vitamins is administered,[6] while the deficiency of the others continues.

If even larger doses of folic acid (100 to 500 mg. a day) fail to prevent or relieve such neurologic relapses it would appear that, although folic acid is capable of producing and maintaining a normal erythrocyte picture, a substance (or substances) other than folic acid is necessary for the maintenance of the integrity of the nervous system. Highly purified extracts of liver have been found to be entirely capable of performing both functions,[7] although the mechanisms of action are not understood. Whether the probably inadequate diets of the patients described contributed to the neurologic relapse by causing deficiency of some substance necessary to maintain the integrity of the nervous system is a matter of conjecture at this time. Such a circumstance is a possibility, however. Neurologic relapse has not been observed as yet in any of our patients who have had a good appetite and have been eating well.

It is becoming obvious, therefore, that folic acid not infrequently fails to control neurologic lesions when given in doses sufficient to maintain normal blood levels. Thus, the clinical use of folic acid as a complete substitute for extracts of liver in treating pernicious anemia is not justified. Although more study will be needed to determine whether massive doses of the vitamin can prevent or relieve neurologic relapses, previous experiences with other members of the vitamin B complex render this circumstance unlikely. It is fortunate that the manufacturers of synthetic folic acid have advised that a combination of folic acid and liver extract may prove more effective than either substance alone.

SUMMARY

Recent reports indicate that synthetic pteroylglutamic (folic) acid does not prevent neurologic relapse in some patients with pernicious anemia.

A case is reported in which "explosive" and rapidly progressive neurologic relapse occurred in the patient after a normal blood picture had been attained and had been maintained with folic acid. The dietary intake of this patient was limited by absence of all teeth.

The possibility is considered that folic acid not only fails to prevent but actually may precipitate neurologic relapse.

It is not justifiable to consider folic acid a complete substitute for extract of liver in the treatment of pernicious anemia in the light of our present knowledge.

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[6] (*a*) Goodman, L., and Gilman, A.. Pharmacologic Basis of Therapeutics, New York, The Macmillan Company, 1941, p. 1251. (*b*) Spies, T. D.; Vilter, R. W., and Ashe, W. F. Pellagra, Beri-Beri and Riboflavin Deficiency in Human Beings, J. A. M. A. **113**: 931 (Sept 2) 1939.

[7] Strauss, M. B.; Solomon, P., and Fox, H. J.: Combined Degeneration of the Spinal Cord in Pernicious Anemia, New England J. Med. **222**: 373 (March 7) 1940.

RESECTION OF THE VAGUS NERVES IN PEPTIC ULCER

Physiologic Effects and Clinical Results, with a Report of Two Years' Experience

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Perusal of the rapidly growing literature on the application of resection of the vagus nerves to the treatment of peptic ulcer makes it clear that there exist four central questions to which early answers should be obtained in order that surgeons and physicians may tentatively evaluate this surgical operation.[1] The added reservation must be made that any treatment for peptic ulcer is not put to its final clinical test until fifteen to twenty-five years have passed; short of this ultimate ideal, everything possible should be done to arrive at an early estimate of the usefulness of this new procedure.

These four questions may be stated as follows:

1. Are patients with peptic ulcer clinically benefited by this operation and, if so, what are the indications, contraindications and clinical side effects?
2. What demonstrable physiologic changes are produced in the gastrointestinal tract by resection of the vagus nerves?
3. How long do these physiologic changes persist?
4. How long do the patients remain well clinically and roentgenologically?

At present it is possible to supply answers to the first three of these four questions and a tentative answer

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This paper has been abbreviated for publication because of lack of space. The complete paper can be found in the authors' reprints, which will be sent on request.

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Read before the Section on Surgery, General and Abdominal, at the Ninety Fifth Annual Session of the American Medical Association, San Francisco, July 4, 1946.

Assistant in surgery (Dr. Moore), assistant in medicine (Dr. Chapman), radiologist (Dr. Schulz) and physician (Dr. Jones) at the Massachusetts General Hospital, instructor in surgery (Dr. Moore) and clinical professor of medicine (Dr. Jones) at the Harvard Medical School.

This study was supported in part by a grant from the Josiah Macy Jr. Foundation

[1] Dragstedt, L. R., and Owens, F. M., Jr.: Supradiaphragmatic Section of Vagus Nerves in Treatment of Duodenal Ulcer, Proc Soc Exper. Biol. & Med **53**: 152-154, 1943. Dragstedt, L. R; Palmer, W. L.; Schafer, P. W., and Hodges, P. C.: Supradiaphragmatic Section of Vagus Nerves in Treatment of Duodenal and Gastric Ulcers, Gastroenterology **3**: 450 462, 1944. Dragstedt, L. R., and Schafer, P. W.: Removal of Vagus Innervation of Stomach in Gastroduodenal Ulcer, Surgery **17**: 742 749, 1945. Dragstedt, L R.: Vagotomy for Gastroduodenal Ulcer, Ann Surg. **122**: 973-989, 1945. Moore, F. D.; Chapman, W. P; Schulz, M. D., and Jones, C. M.: Transdiaphragmatic Resection of the Vagus Nerves for Peptic Ulcer, New England J. Med. **234**: 241-251, 1946. Grimson, K. S; Taylor, H. M.; Trent, J. C.; Wilson, D. A., and Hill, H. C: The Effect of Transthoracic Vagotomy upon the Functions of the Stomach and upon the Early Clinical Course of Patients with Peptic Ulcer, South. M. J. **39**: 460-472, 1946. Moore, F. D.: The Etiology of Peptic Ulcer in the Light of Vagus Surgery, Bull. New England M. Center **8**: 193, 1946. Ruffin, J. M.; Grimson, K S., and Smith, R. C.: The Effect of Transthoracic Vagotomy upon the Clinical Course of Patients with Peptic Ulcer, Gastroenterology **7**: 599-606, 1946.

to the fourth. In this paper we shall attempt briefly to summarize the experience of our first two years with this procedure, especially as that experience casts some light on these four most significant problems.

The background and rationale of this surgical procedure, which stem from past physiologic research and clinical observation, have been briefly reviewed in a previous paper; the employment of this type of operative intervention in the treatment of patients with ulcer rests on these documentary evidences and also on the less well defined but equally important experience of clinical medicine, which tells us that patients with chronic peptic ulcer are apt to have exacerbations in response to certain types of environmental situations. This observation alone, wholly aside from any laboratory research, should lay a foundation for lasting interest in neurologic effects on the stomach.

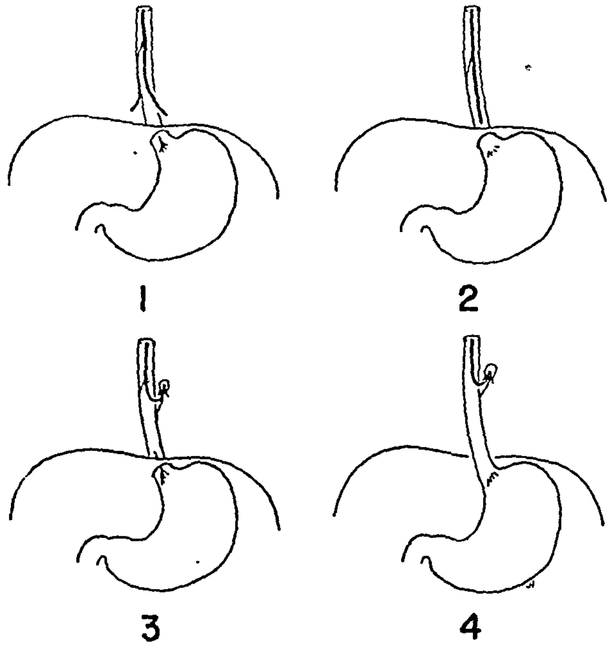

Fig 1.—Diagrammatic representation of four surgical procedures for the division of both vagus nerves at one stage: (1) supradiaphragmatic vagotomy, both nerves sectioned and pleuralized; (2) subdiaphragmatic vagotomy, both nerves cut from the abdominal approach; (3) supradiaphragmatic vagus resection, both nerves cut, portions removed and proximal ends pleuralized and encased to prevent regeneration, and (4) transdiaphragmatic vagus resection, same as (3) save for the opening of the diaphragm and the removal of the nerves down to their decussation on the stomach.

SURGICAL CONSIDERATIONS

The surgical technic of vagus resection will not be dealt with in detail here. Problems in regard to the extent of the operation and surgical nomenclature may be germane, however, to our evaluation of late results. For that reason we have diagrammed in figure 1 four possible methods of sectioning the vagus nerve supply to the stomach. In all four of these surgical procedures both nerves are sectioned at one stage. The word "vagotomy" should be reserved for those operations in which the vagus nerves are sectioned but none is removed. "Vagus resection" is a term which should be used when a section of both nerves is removed.[2] Whether the surgical intervention is transthoracic or transabdominal should be specifically stated, as well as whether or not the diaphragm has been traversed (fig. 2). It is too soon to say whether the more extensive surgical operations that we have performed (3 and 4 in fig. 1) produce a more lasting result than a more conservative procedure (1 and 2 in fig. 1).

CLASSIFICATION OF CASES

The distribution of cases in which surgical intervention was performed during the first two years of our experience with this procedure is shown in figure 3. Forty patients have had resections of their vagus nerves performed by members of the staff of this hospital. All these operations have been done through the chest of the patient, and all of them have involved resections of segments of the nerves rather than vagotomy. They all fall into operative types 3 or 4 of figure 1. In about two thirds of these cases the patients have had the diaphragm opened.

The remaining 37 patients all had peptic ulcers. Ten were jejunal or stomal ulcers, 26 were duodenal ulcers and 1 was a gastric ulcer. The 10 cases of jejunal ulcer were equally divided between those which developed after gastroduodenostomy or gastrojejunostomy and those which occurred following subtotal gastrectomy. Two of the jejunal ulcers came on subsequent to gastrectomy, which must, according to present standards, be regarded as inadequate. In 1 patient a great deal of fundus and antrum had been left proximal to the anastomosis; in the other patient the defunctioned antrum was left in, after the fashion of a Finsterer exclusion operation.

Our hesitancy to operate on patients with gastric ulcer is understandable in view of the histologic uncertainties of ulceration proximal to the pylorus. Yet when 1 patient presented himself who had previously had a duodenal ulcer and now had a gastric ulcer near a stoma established by gastroenterostomy, the gastric ulcer *being gastroscopically and roentgenologically* benign, it seemed justifiable to carry out this procedure. The gradual healing of this patient's ulcer is being followed by gastroscopy, and it should be emphasized that unless complete healing and maintenance of healing occurs further surgical intervention will be performed. *So far, his progress has been satisfactory.*

RESULTS IN CASES OF ULCER

The clinical results to date in all these patients are shown in figure 4. Of the 33 cases observed long enough postoperatively to consider as follow-ups, 7 have been followed postoperatively from one to two years and 26 have been followed from three to twelve months. Of this group of 33 patients, 32 have shown healing of their ulcer. In evaluating these cases clinically one cannot use healing of the ulcer as the only criterion of success. We have, therefore, attempted to classify our results in cases of ulcer under three clinical headings.

1. *Poor Results.*—If the ulcer did not heal and something else needed to be done, either medically or surgically, the result was classified as "poor." This was the situation in the 1 case previously mentioned, in which a defunctioned retained gastric antrum was present after a subtotal resection. In the future, patients with ulcer following subtotal resection will be dealt with according to the adequacy of their resection, inclining toward reresection if the original surgical procedure has been inadequate and performing vagus resection if

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[2] "Vagectomy" is a misnomer, since it implies total or subtotal removal of the nerves.

the gastrectomy has been adequate according to present standards.[3]

2. *Unsatisfactory Results.*—If the ulcer healed but there were other side effects or late results which, from the point of view of the patient, rendered the resection of the vagus nerves of dubious value to him, the results were regarded as "unsatisfactory." There were 3 such patients, in all of whom the ulcers healed. One of these patients came in originally with some obstructive symptoms which disappeared on conservative therapy and postoperatively, over the course of nine months, stenosed his duodenum completely. With no demonstrable recrudescence of his ulcer this patient required a larger opening to his stomach than the stenosed duodenum. For this reason a posterior gastroenterostomy was performed. It is difficult to know in which group to classify this result until we have had more experience, but for the present it must be regarded as short of perfect. Two of the patients have continued to have abdominal pain. These are the 2 patients shown in figure 3 under the category of psychiatric. They were both patients whose abdominal symptoms were not transiently relieved by the use of alkali compounds. They both had a psychiatric background, and although their ulcers have now healed they still have abdominal symptoms, in 1 case made worse by the surgical operation.

3. *Satisfactory Results.*—Twenty-nine of the 32 patients with healed ulcers show results which are, from the clinical point of view, satisfactory. Twenty-three of the 29 patients have been asymptomatic. Five patients have had gastrointestinal symptoms which, though transient, have been a factor detracting from the early postoperative satisfaction of the patient. Three of these 5 patients had diarrhea which lasted from three to five months after the surgical intervention and amounting to three to five bowel movements a day. At times this diarrhea caused much inconvenience, but at no time has it produced nutritional difficulties or dehydration. In all cases it has ceased spontaneously.

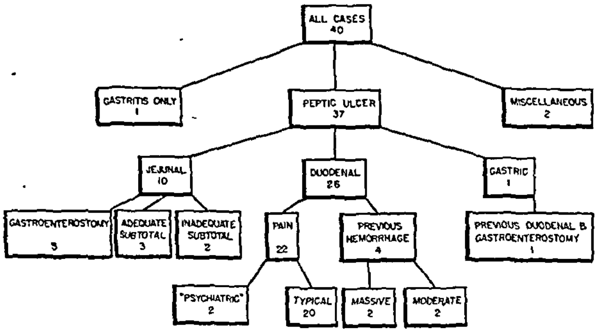

Fig. 3.—Classification of 40 cases treated by vagus resection over a two year period, Aug. 1, 1944 to June 15, 1946 at the Massachusetts General Hospital.

Two of the patients had symptoms after eating, either of fulness or of epigastric pressure and faintness. These postprandial symptoms have likewise decreased with the passage of time, and 4 of the 5 patients in this group regard their operation as having been successful. The fifth, while clear of disease roentgenologically, is now, two years postoperatively, again taking antacids and milk for "ulcer pain." The further course of this patient will be of the greatest importance in our ultimate conclusions.

The patients with jejunal ulcer have done well clinically. One patient (jejunal ulcer following posterior gastroenterostomy) has had postprandial symptoms similar to those following a subtotal resection; he has feelings of weakness and dizziness after eating and feels a desire to lie down. These sensations are decreasing; the jejunal ulcer is healed, and the patient's nutrition is adequate.

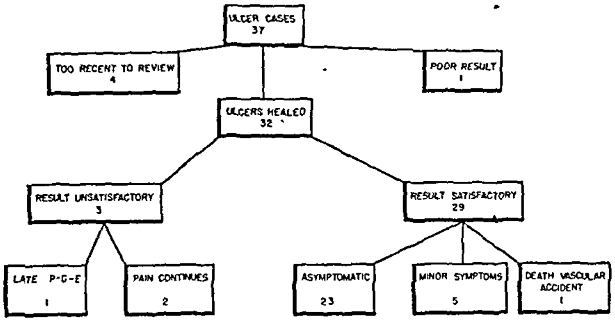

Fig. 4.—Results three to twenty-two months postoperatively in the 37 cases of peptic ulcer (fig. 3) treated by vagus resection. In lower left corner: P. G. E., posterior gastroenterostomy.

One patient died of a cerebrovascular accident nine months postoperatively, the vascular accident being the result of hypertension. The patient was not thought suitable for splanchnic resection, and the vagus resection was successful as far as healing of the patient's ulcer was concerned. This late fatality from a complication of hypertension, however, raises the possibility that vagal interruption renders hypertension more rapidly progressive. If there is an antagonistic balance between the splanchnic and the parasympathetic supply to the viscera, it is conceivable that removing the parasympathetic "brake" allows the sympathetic system to overact uncontrolledly.[4]

Our analysis of these results which were short of perfect may appear to place undue stress on a few patients. The great majority of patients (91 per cent) have been well pleased with the results and have thrown off the shackles of diet and repeated office or hospital medical care for the first time in many years. Yet at this early stage in our experience with a new procedure a detailed consideration of less perfect results may teach us more than many reiterations of the advantages to be gained.

INDICATIONS

From these data as well as from a complete study of the clinical histories, which cannot be included here for reasons of length, we can form several conclusions about the type of patients most benefited by this operation.

Group 1.—In group 1 are patients with previous gastric surgical intervention in which a new outlet to the stomach has been made and in whom renewed ulceration is present. In this group of patients side effects from resection of the vagus nerves have been the fewest, results have been satisfactory and the technical contrast between vagus resection and renewed approach through the abdomen is most striking. Inadequate gastrectomy is much less favorable than gastroenterostomy as a background for resection of the vagus nerves, and this fact should be taken into consideration in selecting patients for operation. If vagus resection should ultimately fail, its failure will first become manifest in this group of patients because of the strong tendency to recur which is found in jejunal ulceration.

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[3] McKittrick, L. S.; Moore, F. D., and Warren, R.: Complications and Mortality in Subtotal Gastrectomy for Duodenal Ulcer: Report on Two-Stage Procedure, Ann. Surg. **120**: 531-561, 1944.

[4] Three cases have been brought to our attention which may illustrate the converse of this relationship. All 3 patients had had splanchnic resections for hypertension and subsequently bled massively and painlessly from duodenal ulcers. One patient succumbed to the hemorrhage. From these events one would conclude that resection of the splanchnic nerves should be approached with added caution in the presence of an active duodenal ulcer, and that vagus resection should similarly be undertaken with caution in the presence of hypertension.

Group 2.—The patients in group 2 are those with painful duodenal ulcer coming on during periods of environmental stress, the pain being transiently relieved by antacid preparations and the patient being of intelligent, nonpsychiatric background. This group is in sharp contrast to the psychiatric group of patients with ulcer in whom surgical intervention should be avoided. This favorable group includes many patients who are wage earners, who are taking care of a family or who are busy in a useful position in society. Among the best results which have been obtained have been those in the group of private patients whose intelligence and insight into their problem has been most striking.

Resection of the Vagus Nerves: Secretory Data from Six Patients

		p_H Units			Titratable Acidity, Clinical Units					Pepsin, Units/Cc. × 10^5			Chloride, mEq/L.			Total Base, mEq/L.		
						Range		Average										
Patient	Date	No.	Range	Av.	No.	Free	Total	Free	Total	No.	Range	Av.	No.	Range	Av.	No.	Range	Av.
B. W	7/19/44	6	1.3-7.9	2.8	6	0- 76	5- 78	36	37	6	13-445	303	6	76-120	101	2	54-162	108
	7/26/44	11	1.1-4.0	1.9	11	0- 95	25-110	46	73	11	251-387	308	11	51-148	110	3	49-118	84
	8/ 1/44	Operation																
	8/ 5/44	13	1.8-5.1	3.6	13	0- 26	14- 67	5	34	13	158-393	315	13	22- 91	52	13	21-144	78
	8/12/44	6	1.3-5.1	2.5	6	0- 54	0- 88	27	48	3	192-460	353	6	58-139	107	5	64- 93	80
	12/16/44	11	1.7-4.3	2.5	11	0- 46	32-128	22	63	11	185-441	334	11	58-124	95	9	31-112	69
	12/18/44	15	1.4-2.5	1.9	3	34- 46	49- 68	41	58	15	331-523	409	0	......	..	14	69-125	80
	5/25/45	14	1.2-6.5	2.4	14	0- 62	7-120	23	50	14	49-470	338	14	63-127	81	13	54- 80	64
	6/ 1/46	10	2.2-8.8	5.9	10	0- 19	5- 38	3	17	..	....	...	9	27-138	93	8	14-181	97
M. E.	7/25/44	14	1.2-8.4	2.6	14	0- 61	4-128	27	51	14	42-426	321	14	40-175	101	3	55-149	89
	8/ 3/44	Operation																
	8/19/44	14	2.4-7.5	4.0	10	0- 15	0-105	3	54	12	244-536	428	14	49-142	95	12	65-145	96
	4/19/45	8	2.0-3.1	2.6	8	7- 19	9- 72	13	42	8	113-321	212	8	18-119	57	8	7- 93	39
	8/ 6/45	4	3.0-4.8	4.0	4	0- 0	11- 23	0	15	4	57-135	93	1	52- 83	72	..	......	...
G. B.	12/16/44	13	1.2-2.5	1.5	13	16-113	53-149	66	91	13	386-534	156	13	76-149	117	9	43- 98	60
	12/26/44	Operation																
	1/ 9/45	16	1.3-4.2	2.4	16	0- 55	25- 95	32	67	16	161-411	294	16	34-132	99	7	59-174	102
	5/28/46	5	1.3-5.0	2.2	5	0- 81	6- 89	38	46	..	....	...	..	......	...	..	......	...
J. S.	2/21/45	7	1.3-3.1	1.7	7	21- 35	38- 72	41	59	7	247-427	304	7	108-134	122	7	58-110	76
	2/26/45	Operation																
	3/ 6/45	14	2.1-6.6	4.8	14	0- 19	0- 27	2	12	6	0-220	127	8	95-136	101	6	99-154	103
	8/ 3/45	..	......	...	..	.....	......	..	..	3	33-259	144	7	92-118	105	2	82-923	87
	8/ 3/45	13	1.3-6.8	4.4	13	0- 26	6- 95	8	40	5	43-321	147	13	64-129	107	5	64-115	94
	5/15/46	11	1.6-6.0	3.1	11	0- 30	14- 48	14	31	..	....	...	..	......	...	..	......	...
C. P.	3/ 3/45	14	1.2-4.2	2.0	13	0- 53	8- 88	35	49	10	259-517	372	11	112-266	167	5	59-110	85
	3/ 6/45	Operation																
	3/14/45	11	3.0-6.9	5.8	9	0- 0	4- 41	0	16	7	83-398	138	9	34- 97	63	5	51-133	83
	5/10/46	4	5.8-6.3	6.1	4	0- 0	15- 24	0	19	..	....	...	..	......	...	..	......	...
L. R.	5/25/45	15	1.1-5.8	1.9	15	0- 89	28-117	47	72	15	48-426	279	15	53-139	111	15	32- 99	63
	6/ 8/45	Operation																
	6/13/45	6	2.7-4.3	3.6	6	0- 16	7- 70	4	37	5	176-524	365	5	27- 64	42	6	0- 41	22
	5/25/46	4	1.8-2.0	1.9	4	33- 37	73-100	35	86	..	....	...	..	......	...	..	......	...

Group 3.—In group 3 are patients whose ulcer has not been notable for the symptoms produced, but which has produced hemorrhage or perforation in the past and which has been clearly demonstrable roentgenologically. The chief danger in carrying out resection of the vagus nerves on the "painless bleeder" is the hazard that one may operate on a patient who is bleeding from esophageal varices, a Meckel's diverticulum or other gastrointestinal pathologic structure. If the bleeding is from an ulcer vagus resection will, in our experience, heal the ulcer, and there is nothing irrational about carrying out the procedure. In the patient with painless bleeding the problem is not one of physiology but one of clinical diagnosis.

CONTRAINDICATIONS

It is possible to make a tentative statement as to the type of patient who is not improved by this operation.

Group 4.—This group includes patients with disturbed psychiatric background who are psychoneurotic or frankly psychotic, with multifarious symptoms, most of which are unrelieved by antacid preparations and only a small fraction of which are related to the ulcer. This type of patient will react poorly to surgical intervention. The difficulties of gastric emptying, instead of being accepted as a transient result, will be seized on as evidence of failure; one must avoid the error of concluding that because the patient is psychiatric the disorder in the stomach must be psychogenic and therefore susceptible to relief by resection of the vagus nerves.

It is important to emphasize here that vagus resection is not a cure-all for abdominal pains. No demonstrable sensory fibers reaching a conscious level are sectioned, and as far as the relief of pain is concerned the operation is of great specificity, relieving pain only when it is due to peptic ulcer.

Group 5.—Patients who are acutely bleeding are included in group 5.

Group 6.—Patients with frank cicatricial obstruction constitute group 6. A two stage procedure may be worked out for these patients which will be satisfactory. Dragstedt has described a one stage subdiaphragmatic vagotomy and posterior gastroenterostomy. There are two theoretic objections to this procedure. First, that in a patient with advanced obstruction, dilatation of the stomach may be produced by vagus resection which would be extremely difficult to control despite gastroenterostomy. Second, by a subdiaphragmatic vagotomy one cannot remove as much nerve as would seem desirable. Were a frankly obstructed patient to exhibit a clinical picture suggesting that his ulcer activity would react well to vagus resection, we would consider that it was rational to decompress his stomach first by means of a posterior gastroenterostomy and to follow this with an adequate transthoracic resection of the vagus nerves as a separate procedure. The passage of further time alone will tell us whether or not this combination has anything to recommend it over subtotal gastrectomy.

ORGANIC CHANGES

Examples of secretory and motility alterations produced by vagus resection have been shown in a previous publication. The follow-up secretory studies on 6 patients are shown in the accompanying table, in which the number of observations on a given date is shown, with the range of values and the averages.

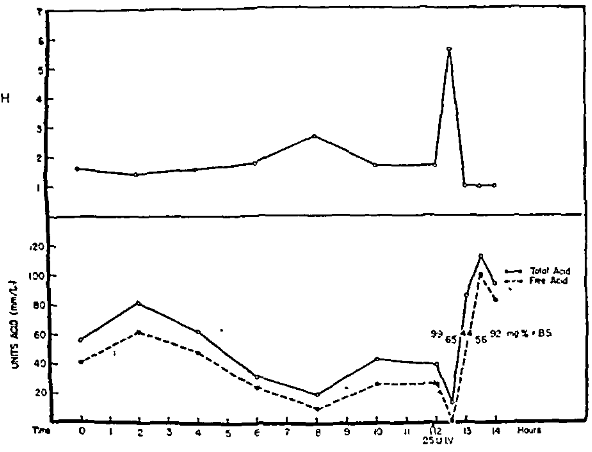

Fig. 5.—H. W.: Serial determinations of overnight secretion (starting at 8:00 p. m.) in a patient with a healed duodenal ulcer, posterior gastroenterostomy and active gastric ulcer.

Preoperatively the overnight secretion is only moderately acidic. There is a typical biphasic response to insulin (administration of 25 units intravenously shown by arrow) with initially an alkaline and at one hour a decidedly acid secretion.

Increases in the p_H value and lowering of free acidity are consistent and usually maintained to some extent, though not at the level obtained in the first postoperative observation. Pepsin[7] changes are inconstant;[8] the total chloride content, like acidity, may fall. The total base concentration may rise, but the changes are not wholly consistent.

Figures 5 to 9 demonstrate secretory alterations in response to insulin hypoglycemia.

The gastric response to insulin-induced hypoglycemia has been worked out by Weinstein and his associates[9] as a standard test and is going to be an extremely reliable and important observation to carry out on these patients. It should be done in the morning on a fasting stomach and, if the patient is postoperative, the stomach should be emptied before the test is begun. We have found that 20 to 25 units of insulin should be administered intravenously, in accordance with the weight of the patient, using the larger dose for men who weigh over 150 pounds (68 Kg.). Multiple samples of blood for sugar determination and multiple gastric samples can be taken, although the blood sugar and gastric sample one hour after the administration of insulin will usually yield the desired information when compared with the preinsulin level.

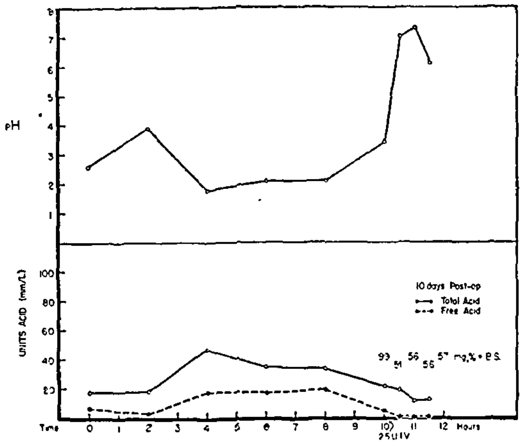

Fig. 6.—H. W.: Ten days postoperatively there is less acidity overnight, and the response to insulin is monophasic, producing only an alkaline secretion.

In our experience resection of the vagus nerves has uniformly abolished the acid response to insulin-induced hypoglycemia in the early postoperative phase.[9a]

The importance of these demonstrable organic changes in the stomach after following vagus resection hinges largely not on their description or extent but rather on their duration. Approximately one year after our first patient was operated on, we began to obtain evidence that local physiologic changes in the resting unstimulated stomach tended to return to normal: Now

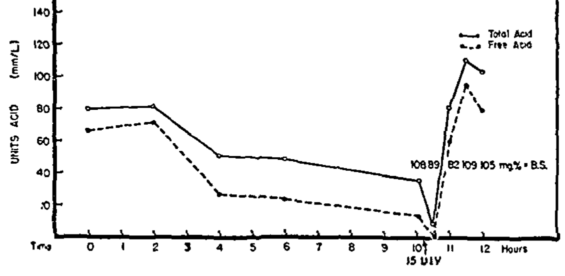

Fig. 7.—S. D.: Preoperative serial determinations of gastric acidity overnight (starting at 8:00 p. m.) and in response to insulin-induced hypoglycemia.

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[7] Anson, M. L., and Mirsky, A. E.: Estimation of Pepsin with Hemoglobin, J. Gen. Physiol. **16**: 59-63, 1932.

[8] Pepsin assays have been done uniformly on 1 cc. of gastric juice which is undiluted. This avoids the possible errors traceable to dilution as pointed out by Bucher, G. R.; Grossman, M. I., and Ivy, A. C.: A Pepsin Method: The Role of Dilution in the Determination of Peptic Activity, Gastroenterology **5**: 501-511, 1945.

[9] Weinstein, V. A.; Colp, R.; Hollander, F., and Jemerin, E. E.: Vagotomy in Therapy of Peptic Ulcer, Surg., Gynec. & Obst. **79**: 297-305, 1944.

[9a] Recent experience has shown the insulin test to be a less reliable test than this would indicate. Serial tests have shown variations in the same patients.

we can state without reservation that gastric motility as recorded in the resting state by the kymograph may return to normal or nearly normal levels by the end of one year. Gastric atony seen at fluoroscopic examination is gone in three to nine months, although some delay in pyloric emptying may persist. Secretory changes, as tested by multiple quantitative determinations of the overnight gastric secretion, tend to return toward the normal range over a period of six to twelve months, although some reduction in acidity and an increased p_H value may persist. The response to insulin-induced hypoglycemia, however, has remained abolished in all our patients except one, who is worth discussing in some detail. He was the fourth patient on whom resection of the vagus nerves was performed at this hospital. He had an extremely intractable duodenal ulcer of eighteen years' duration, and his clinical result has been eminently satisfactory and has remained so despite secretory and motility findings which are in the normal range. When he was given a dose of insulin, which produced severe systemic symptoms and a blood sugar level of 33 mg. per hundred cubic centimeters, excessive sweating, excessive salivation, abdominal discomfort and massive gastric secretion were produced (fig. 9). The question arises as to how this severe hypoglycemia affects the stomach and whether this is a different phenomenon from the gastric stimulus produced by blood sugar levels in the vicinity of 50 to 70 mg. per hundred cubic centimeters. In all our preoperative insulin tests we have found a better correlation between the patient's symptoms and his gastric response than between his blood sugar levels and his gastric response, presumably because persons vary in their sensitivity to hypoglycemia. On this basis the systemic symptoms experienced by this patient were severer than any others we have produced and his gastric secretion showed a definite response despite the continued good clinical results following vagal interruption.

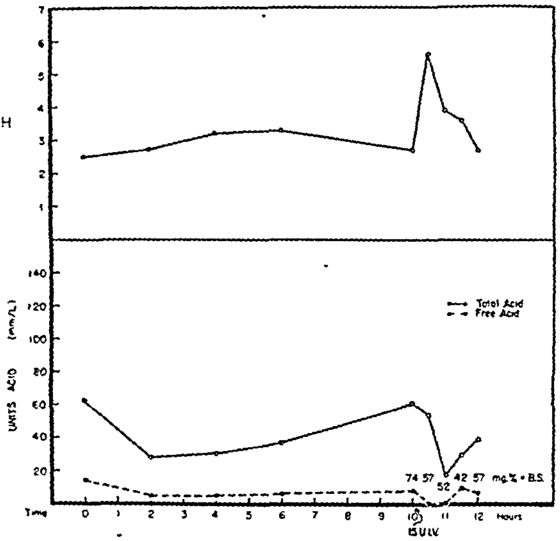

Fig 8—S D As in H W (figs 5 and 6), this patient with a longstanding duodenal ulcer shows diminution in resting acidity and abolition of an acid secretory response to insulin thirteen days postoperatively as compared with preoperatively (fig 7). The preoperative hypoglycemia produces a biphasic gastric response as in H. W. Postoperatively only an alkaline response is produced.

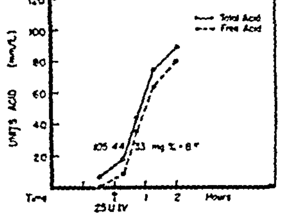

Fig. 9—G. B: Postoperative secretory response to insulin-induced hypoglycemia eighteen months after vagus resection for duodenal ulcer. A large dose of insulin produced excessive systemic symptoms and a blood sugar value of 33 mg. per hundred cubic centimeters A decidedly acid secretory response is obtained despite continued evidence of vagal severance by the criteria of clinical well being and resting acidity.

This patient brings out another point about vagal surgery which may transcend in importance all the laboratory data we have obtained. This patient is a tall, thin, lanky man, a worrier with a typical ulcer habitus. He states that prior to his operation any sort of difficulty at home or in his business caused him to have symptoms in his stomach. Since surgical intervention he has not observed that correlation, and even during the illness of his wife, an event which preoperatively would have produced an exacerbation of his ulcer, he has had no difficulty whatsoever. This cortical-gastric disconnection has been maintained, and even at the time when he showed an acidity response to a blood sugar determination of 33 mg. per hundred cubic centimeters he still manifested an excellent symptomatic result.

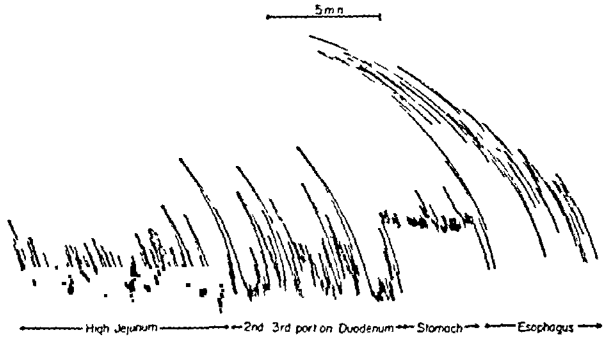

Fig 14—Preoperative balloon kymographs of motility in the upper gastrointestinal tract of patient A H

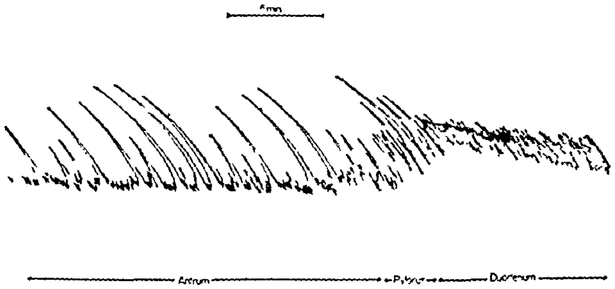

Fig 15—Same as figure 14. A clear depiction of the alteration in motility as the balloon passes through the pylorus is seen This patient had a duodenal ulcer. There is no striking abnormality to be seen in these tracings.

Physiologic changes observed by kymograph after vagus resection are shown in figures 10 to 23. Kymographic tracings must be made with special care with reference to three features: accurate fluoroscopic control, prolonged observation and recognition of the stimulus produced by intragastric balloons of varying dimensions. The "quiet stomach" of a postoperative patient can often be stimulated into pronounced activity by a sudden increase in the size of the balloon. In addition to the types of observations shown in these figures we have studied the lower ileum (by ileostomy) and rectum. Motor changes beyond the pylorus are transient and ill defined.

It should be emphasized again that the threshold of pain to balloon distention in esophagus, stomach, duodenum and small bowel is unchanged by this operation. Nausea, vomiting, appetite, hunger, anorexia, fulness and crampy gastric pain may all be experienced by patients subsequent to resection of the vagus nerves.

COMMENT

The data presented herein might be summarized in the form of answers to the various questions which were posed at the outset.

1. *Are patients clinically benefited by this surgical procedure, and if so what are the indications and contraindications?*—In the patients operated on thus far the ulcers have healed with great uniformity. At the present time there can be no doubt that vagus resection offers a potent and effective means of dealing with peptic ulcer. The patient who most consistently and characteristically is benefited is that patient who most closely approximates the "typical ulcer case" and who, at the same time, does not have frank psychiatric or psychoneurotic symptomatology. This should not be interpreted as meaning that resection of the vagus nerves is contraindicated in all other types of patients. It is simply a statement of our experience in regard to the type of patient whose clinical result is most reliable. If the patient has had previous surgical intervention there is, in a sense, an added indication, though the basic problem remains the same. Clinical side effects are not negligible but rarely detract from the result.

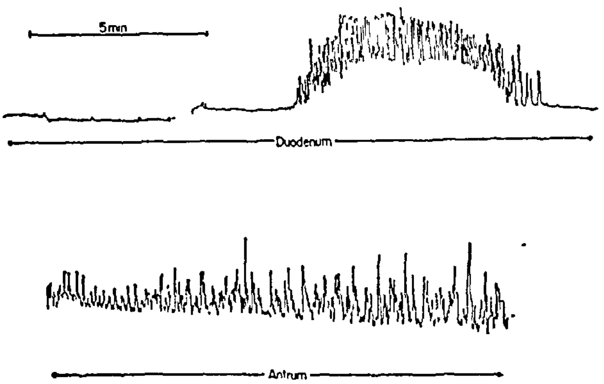

Fig. 16.—Postoperative balloon kymographs of motility in the upper gastrointestinal tract of patient A. H., six months after vagus resection As compared with figures 14 and 15, there are periods of prolonged quiescence in both duodenum and antrum. In both cases, with no apparent stimulus, considerable motor activity arises and then ceases spontaneously. It is apparent from such results that isolated short observations are of little value or significance.

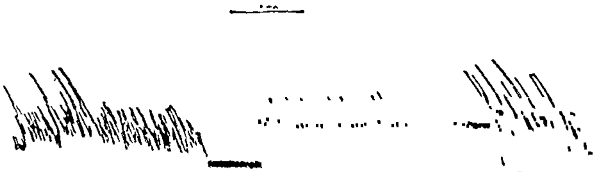

Fig 18—Preoperative balloon kymograph of motility in the upper gastrointestinal tract of patient W. M. There is no abnormality clearly demonstrable. This tracing shows a short period of quiescent antrum, followed by activity in response to an additional quantity of air in the balloon.

2. *What demonstrable physiologic changes are produced in the gastrointestinal tract by vagus resection?*—A decrease in motility and acidity with no change in sensation is the typical postoperative picture in the resting unstimulated stomach of patients who have had resection of the vagus nerves. Nausea, vomiting and epigastric sensations of fulness may still be experienced, and there is no change in the sensory threshold to balloon distention of the esophagus, stomach, duodenum, jejunum and ileum. Changes in motility beyond the pylorus are transient, ill defined and inconstant. Secretory and motility responses to stimuli mediated over the vagus nerves are the most important type of observation to be made postoperatively in these patients. At the present time the insulin test is the most reliable such stimulus. It is conceivable that dextrose or metrazol may give pancreatic responses mediated over the vagi which will be equally good tests for vagal division.[10] The final criteria in this field, however, rest partly in the psychiatric realm, as it is the patient's organic response to certain types of environmental stimuli which seem to determine his clinical result. At the moment we do not have a reliable way of producing these stimuli in patients, though such methods may be developed by future research.

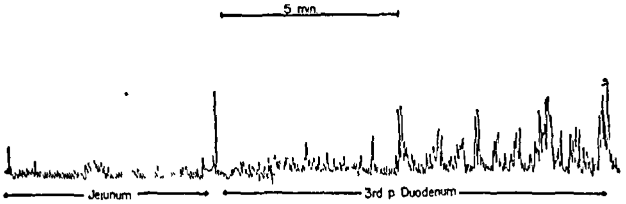

Fig. 20—Postoperative balloon kymograph of motility in the upper gastrointestinal tract of patient W. M. four months after vagus resection.

3. *How long do these physiologic changes persist?*—In our experience demonstrable changes at the organic level in the resting unstimulated stomach have for the most part disappeared by the end of one year. Evidence that section of the vagus nerves still persists is to be found in the continued abolition of secretory response to hypoglycemia in most of the patients. The continued clinical results as well as the postmortem data from 1 patient also indicate that regeneration of the nerves has not taken place after use of the operative procedure as performed in this hospital. We may, therefore, conclude that the return to normal resting function is an evidence of gastric autonomy and that effective severence of the main neural pathways between brain and stomach still persist.

4. *How long do the patients remain well?*—We can only answer this question to the extent of our two years' experience. In that time our patients have remained well, and their clinical results appear to outlast the duration of those organic changes which we have studied in the resting stomach. One patient who two years postoperatively finds that it is necessary to

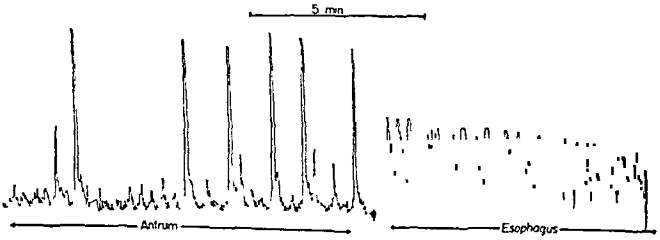

Fig 21—Same as figure 20 The esophagus and small bowel show activity similar to that seen in figures 18 and 19 The gastric antrum has regained its tone and produces high peristaltic waves.

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[10] Gellhorn, E: Autonomic Regulations, New York, Interscience Publishers, Inc, 1943.

take milk or antacid to relieve epigastric discomfort despite the absence of a demonstrable ulcer raises interesting questions about the ultimate fate of these patients, questions which can have no final answer at the present time.

To be effective and take a permanent place in the field of therapeutics a treatment of peptic ulcer must be lasting and devoid of undesirable side effects. This surgical procedure appears to be effective, and within the limits of our knowledge it is lasting. Its undesirable side effects, while present, do not occur in more than a minority of patients and are not a major consideration. To most patients its side effects are not in any degree comparable to their preoperative difficulties.

SUMMARY

The clinical and laboratory data in a group of patients operated on for peptic ulcer over a period of two years by resection of the vagus nerves are presented.

Clinical results are good; healing of the ulcer is the most uniform feature of the series; recurrences have not been encountered; transient undesirable side effects do occur and are found in about 10 per cent of the patients.

The early decrease in fasting acidity and motility, which is so readily demonstrable after this operation, gradually returns toward normal until, at the end of a year, little abnormality can be found by these criteria. The secretory response to insulin-induced hypoglycemia remains abolished in most cases, and the clinical well-being of the patients also appears to outlast the duration of the early secretory and motility changes.

This suggests strongly that although the immediate relief of pain and healing of the ulcer which are observed after vagus resection may be due to changes in fasting motility or secretion produced by that operation these resting changes are relatively transient, and any prolonged relief which this surgical procedure confers on the patient is due to some more subtle effect.

This more subtle effect is probably traceable to severance of those nervous pathways which communicate the patient's adaptive reactions from brain to stomach. In patients suffering from peptic ulcer impulses transmitted over these pathways in response to environmental situations often result in exacerbation of their disease. After resection of the vagus nerves such impulses cannot reach the stomach and exacerbations of ulcer have not occurred.

ABSTRACT OF DISCUSSION

Dr. Leland S. McKittrick, Boston: I have never performed this operation, but I am here because of my interest in the problem of peptic ulcer and because of the privilege that has been mine in following the work of Dr. Moore and his co-workers at the Massachusetts General Hospital. If we as surgeons are realistic about our approach to peptic ulcer, we must admit that the best we have to offer leaves a great deal to be desired. It is completely unphysiologic to remove a large portion of a person's stomach for the treatment of an ulcer of the duodenum. It is also a destructive procedure. The results obtained are not too satisfactory. The mortality is low in experienced hands and the incidence of recurrent jejunal ulcer is not large; but there is a sizable group of patients (I don't know just how many, but I suspect it comprises from 10 to 15 per cent) in which the side products of the surgical operation are distressing and at times extremely disabling. I am referring now not only to the so-called "dumping" syndrome but particularly to that group of patients who fail to gain in weight and strength and therefore lack the ability to be completely rehabilitated. Nevertheless, the procedure of choice for the majority of intractable duodenal ulcers is an adequate subtotal resection. On the other hand groups like Dr. Moore and his co-workers, Dragstedt and others, should be encouraged to continue with their careful, painstaking studies of this problem even though vagus resection is far from the point where it can be accepted as the treatment in all cases. There are, however, several points that are justified. It is a more truly physiologic approach to this problem and it is safe in experienced hands. Not to be overlooked is the fact that if it fails, there is nothing which makes it impossible to do a subtotal resection or which even complicates the carrying out of that procedure. In the doing of our subtotal resections we must continue to perform a really adequate operation if we expect vagus resection to be successful in the treatment of the occasional jejunal ulcer we may encounter. It is of interest that in the patients of Dr. Moore where the antral mucosa has been left in or where an inadequate subtotal resection has been done the response to this surgical procedure is not satisfactory.

Dr. William DeW. Andrus, New York: There entered the surgical service of the New York Hospital a couple of months ago a man who by roentgen examination had an extensive carcinoma of the midportion of his esophagus, extending above the arch. In order to make some direct studies on gastric secretion a preliminary gastrostomy was performed. Through that gastrostomy, Dr. Stewart Wolf who, with Dr. Harold Wolff, has done extensive studies on gastric physiology, with particular reference to the effects of emotion, then conducted a long series of studies over a period of about two weeks, after the gastrostomy of the patient had healed. His chest was then explored and it was found that because of fixations to the aorta and other structures it was impossible to remove the tumor. At that operation, however, a resection of the vagus nerves was carried out, and after he had recovered from that procedure the previous studies were repeated. They confirmed practically entirely those that Dr Moore has commented on, with the exception of the effects on acidity; this patient had complete anacidity. However, the striking effect on which I wish to comment was that before surgical intervention, under direct vision, it was possible to observe that emotion, particularly resentment, would bring about a pronounced vascular response in his stomach, which could be measured on a color scale; following operation with resection of the vagi resentment and anger, though they caused flushing of the face and other evidences of emotional response, failed to produce any color changes in the mucous membrane of his stomach. Thus in a single case, carefully studied, direct evidence has been obtained of interruption of a well defined vascular response to emotion, after the resection of the vagus nerves. This procedure may be a more physiologic attack in that it may interrupt a basic etiologic factor in the production of ulcer.

Dr. Dewey Tuttle, Houston, Texas: We have done a few of these operations in Houston. Chiassi, an Italian surgeon, showed in 1925 that even beneath the diaphragm enough of the vagus nerve could be resected to lessen the probability of recurring marginal ulcers, but Dr. Moore's sections and his diagrams show the implausibility of approaching the vagus nerve below the diaphragm. Dr. Moore has gone even further than Dr. Dragstedt and the group at Duke, and to make sure that he is getting the vagus nerve he has shown you the second type or the last two types of the more radical approach to the esophagus. In our work, we felt we had been getting the vagus nerve because of the response to the hyperinsulism, which has proved that we get the same curve as in Dr. Moore's tracing. We have had only 5 of these cases that we can follow to date, but every one of the patients has shown improvement; there have been no bad results and no mortality. Dr. Moore has pointed out that this work is in its infancy and that his are preliminary studies. Resection of the vagus nerves has been performed on a large group, relatively speaking, and attention should be paid to the one note of warning that he does sound. This operation must be approached with precaution. Horsley pointed out that hypermotility, hypersecretion and hypertonus play no little part in the formation of ulcer. Every one of these patients is immediately improved in each of these categories. We are having a little trouble in our postoperative study, in convincing the medical practitioners in our part of the country that there is something here to offer for the relief of the peptic ulcer sufferer, that is, the decided dilatation of the stomach with delayed emptying time. It is peculiar that the total acid determinations in our group of patients have shown no essential change. The total acids usually play little part in causing distress in these persons. The University of Chicago group are showing impressive results in a new approach below the diaphragm and short circuiting by a gastrojejunostomy. Surely there is some phase of vagus resection that can be used.

DR. FRANCIS D. MOORE, Boston: In regard to Dr. McKittrick's mention of the "dumping" syndrome and failure to gain weight, I should mention that we had 1 patient in whom, after vagal resection, there developed a characteristic "dumping" syndrome, similar in every way to that following subtotal gastrectomy. However, these symptoms went away in approximately eight weeks, and he is now well and gaining weight. The chief interest attaching to this incident is the fact that the sensory arc of the "dumping" syndrome is evidently not carried over the vagi. Dr. Andrus has told of a most interesting patient in whom mucosal changes could be followed through a gastrostomy after resection of the vagus nerves. This is most fascinating to me, and I believe it represents the real frontier in the ulcer problem. I wish we had some way of studying our patients' gastric response to emotion before and after this operation because it is really the most important single aspect of vagal surgery. We are trying to get at it with the collaboration of our psychiatric service. Drs. Wolf and Wolff in New York, of course, have done a tremendous amount of work in that field and have a wonderful background to pursue it further. As far as subdiaphragmatic section of the vagus nerves is concerned, I have felt that it is inadvisable because one could not remove as much nerve or do as much to prevent regeneration as is possible through the chest. However, I must point out that we have had little experience with the subdiaphragmatic maneuver and that we must give it a more adequate trial before making any dogmatic statements.

Autobiography of Cardano.—It is indeed appropriate that the first full dress medical autobiography should be that of Girolamo Cardano, for in the pitiless self scrutiny of this Renaissance doctor are to be found many, if not all, the elements that characterize autobiography in general and medical autobiography in particular. Cardano was one of the strangest figures of the sixteenth century, in the first year of which he was born. Well known is Boerhaave's remark on Cardano that "no one was wiser when he was wise; nobody was more foolish when he erred." Hegel described him strikingly as "a world famous individual in whom the dissolution and ferment of his time are manifested in a most extreme form." Goethe likewise regarded him as a typical representative of Renaissance individualism and expressed the following judgment: "Cardanus everywhere regards science in relation to himself, his personality and his life history, with the result that his works are characterized by a naturalness and vitality which attracts and refreshes, and stimulates us to activity. He is not a doctor in a long robe who imparts instruction to us *ex cathedra* but rather a man who goes about, observes and is astonished by what he sees, experiences pain and joy, and passionately thrusts upon us an account of all this."—Caspari-Rosen Beate, and Rosen, George: Autobiography in Medicine, *J. History Med.*, April 1946.

THE TREATMENT OF ACUTE GOLD AND ARSENIC POISONING

Use of BAL (2,3-Dimercaptopropanol, British Anti-Lewisite)

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The treatment of acute poisoning due to gold and arsenic compounds with BAL (2,3-dimercaptopropanol, British Anti-Lewisite), has given successful results.

Although gold has been acclaimed the best single therapeutic substance in the treatment of rheumatoid arthritis,[1] its use heretofore has been limited largely to a few rheumatologists and clinics having wide experience in chrysotherapy. This rather strict limitation of the use of gold is due to the occasional unpredictable and devastating symptoms of toxicity that appear when gold products are administered by inexperienced physicians. In our series of approximately 750 courses of gold injections,[2] the untoward reactions which were encountered, largely in our earlier use of gold, included generalized pruritus, seborrheic dermatitis, urticaria, purpura, secondary anemia, exfoliative dermatitis, stomatitis, thrombopenic purpura, agranulocytosis, jaundice, gastroenteritis and conjunctivitis. Among additional toxic manifestations reported by others are peripheral neuritis, dizziness, nausea, vomiting, nephritis and acute yellow atrophy of the liver. Toxic reactions are stated to occur in 20 to 56 per cent of cases, but with proper precaution this incidence may be materially reduced. The patient must be instructed to be on the alert for itching of the skin, rash and soreness of the mouth. The physician should limit the weekly dosage to 50 mg. and the total dosage of the course to about 765 mg. and should make periodic examinations of the blood. Gold should not be used in the treatment of patients with severe diabetes, nephritis, hepatitis, decided hypertension or hemorrhagic diathesis.

However, in spite of all possible precautions on the part of the patient and physician, occasional sensitivity to gold is encountered which may result in extremely severe toxic manifestations, probably the most distressing of which is exfoliative dermatitis. Search, therefore, has been made during the two decades since the introduction of gold therapy by Forestier [3] for an effective antidote to poisoning due to this metal. During the war research groups in England and the United States developed, under strict secrecy, an effective antidote against acute arsenical poisoning, notably that caused by lewisite. With the lifting of security restrictions and the publication of the extensive researches in this field by the two governments, BAL (2,3-dimercaptopropanol) became available for general use. Although during the war there was fortunately no opportunity for using this substance as an antidote to lewisite or related arsenic-containing substances designed for chemical warfare, valuable applications of it were made to the treatment of toxic reactions due to arsenic therapy of

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From the arthritis clinic of the Philadelphia General Hospital.

[1] Cecil, R. L.; Kammerer, W. H., and de Prume, F. J.: Gold Salts in Treatment of Rheumatoid Arthritis, Ann. Int. Med. **16**: 811 (May) 1942.

[2] Cohen, A.: Goldman, J., and Dubbs, A. W.: *To be published.*

[3] Forestier, J.: Gold Therapy in Chronic Rheumatism, Bull. et mém. Soc. méd. d. hôp. de Paris **53**: 323 (March 11) 1929.

syphilis.[4] This drug was soon shown to be effective also as an antidote in acute poisoning due to mercury,[5] cadmium,[5a] zinc[6] and copper.[7] The logical extension of these studies is the employment of BAL as an antidote to acute poisoning caused by gold in the course of chrysotherapy. No previous publication on this use of BAL has come to our attention.

Now generally accepted is the hypothesis that heavy metals[8] such as arsenic and mercury exert toxic effects on biologic systems by reacting with sulfhydryl groups of the protein fraction of cellular enzymes to form mercaptides. Arsenic and gold are closely related chemically in regard to valencies and inorganic reactions. It may therefore be presumed that their biochemical reactions are similar and that BAL is able to reverse the toxic effects of gold, as it has been shown to do in the case of arsenic. It may be presumed that toxic reactions from gold are due to its combination with sulfhydryl groups in stable compounds in tissues, and that sulfhydryl groups in the dithiol BAL compete effectively with these dithiol protein-metal compounds in the tissues, thus eliminating the offending gold, relieving the biochemical lesion and restoring the normal enzyme systems by a mechanism parallel to that concerned in the BAL therapy of arsenic poisoning. Although the preliminary studies reported here are not confirmed by laboratory studies of gold toxicity in animals or by gold excretion studies, the clinical results indicate a close similarity between the effects of BAL in toxic reactions to gold and arsenic. Results of attempted laboratory confirmation of these presumptions will be published.

On account of our strict prophylactic regimen, no opportunity for a study of BAL has presented itself among cases in which gold therapy was initiated by us. However, in the few months that BAL has been available we have had 5 referred cases of acute gold toxicity and 1 of arsenic toxicity which we have treated with this new antidote. Results of therapy in all cases were most gratifying, in that there was prompt and complete reversal of all toxic manifestations. Almost dramatic was the disappearance of cutaneous lesions, including severe exfoliative dermatitis.

Unfortunately, BAL is not an entirely ideal antidote for poisoning by the heavy metals because it has toxicity of its own. Among its toxic effects are malaise, nausea, vomiting, salivation, lacrimation, paresthesia, perspiration, sense of warmth and, most commonly, pain in legs, arms, abdomen and head. Acceleration of the pulse and increase in the systolic and diastolic blood pressures are frequently observed. In the antidotal use of BAL these toxic symptoms are usually transient, disappearing in a few hours at most, and may be disregarded in view of the resultant benefit.

The product used in this study was a 10 per cent solution of BAL in peanut oil with 20 per cent benzyl benzoate[9] at the suggestion of Dr. Harry Eagle, Director of the United States Public Health Service Venereal Disease Research and Postgraduate Training Center, Johns Hopkins Hospital. It is hoped that similar studies with BAL glucoside[10] or other less toxic derivatives for intravenous use will eliminate the fear of the use of gold in the treatment of rheumatoid arthritis and permit its more general use in relieving this widespread condition.

REPORT OF CASES

CASE 1.—G. W., a white man aged 20, had oxophenarsine hydrochloride therapy initiated March 6, 1946, with 40 mg. of the drug given intravenously. This dosage was repeated March 8, 11, 13, 15 and 18, for a total of six 40 mg. doses, the last dose being overlapped with an intramuscular injection of a bismuth preparation. During the evening of March 18 chills, fever, nausea and vomiting developed, but the patient did not report to his physician. On March 19 a purplish, papular, pruritic rash developed. Another injection of a bismuth preparation was given intramuscularly on March 20, and 1 Gm. sodium thiosulfate and 3 minims (0.18 cc.) epinephrine were administered intravenously. He felt well until the afternoon of March 21, when he had a convulsion and lapsed into a coma. There had been no previous episode of convulsions or loss of consciousness.

On March 22 the patient was brought to Philadelphia General Hospital in a comatose state, and BAL therapy was initiated by the intramuscular injection of 2 cc. of a 10 per cent solution of the drug in oil with 20 per cent benzyl benzoate every four hours for seven doses, or a total of 14 cc. On March 23 a total of 8 cc. was given, 2 cc. every six hours for four doses. The patient remained comatose during the first twenty-four hours of therapy. Thirty-six hours after admission signs of pulmonary edema were manifest. It is not probable that this was due to BAL toxicity. Vigorous therapy with positive pressure oxygen, intravenous hypertonic dextrose and spinal puncture was instituted. The pressure of the spinal fluid was 420 mm. of water. After the spinal puncture respiration became less labored, and by midnight of March 23 there was no respiratory embarrassment. Massive doses of vitamin K were given because of a 50 per cent prothrombin level. Concurrently, large doses of parenteral ascorbic acid and calcium gluconate were given because of the purpuric rash and other purpuric phenomena elicited by the application of the sphygmomanometer cuff.

By March 24 the patient was conscious, answered questions intelligently and appeared to be recovering. Therapy was continued with BAL (2 cc. every six hours for three doses), calcium gluconate, vitamin K and ascorbic acid. On March 25 the dosage of BAL was 2 cc. every six hours for three doses; from March 26 to 31 the dosage was 2 cc. twice a day. During this time the purpura disappeared, the only residual symptoms being a positive Chaddock's sign on the right side and some continuing hepatic damage, as evidenced by 49 per cent blood prothrombin concentration with cephalin-cholesterol flocculation in forty-eight hours. This was a typical case of severe arsenical reaction, which presumably would have terminated in death but for the prompt use of this new antidote.

CASE 2.—J. J., a Negro woman aged 63, had previous to hospital admission been given 7,900 mg. of aurothioglycolanilide (Lauron, Endo Products, Inc.), an insoluble gold preparation. One month after discontinuing these injections, the patient noted the development of a dermatitis around the right ear which soon spread to involve the entire right side of the neck, continuing around the neck to the left side and including the skin around the left ear. Similar lesions developed beneath the breasts and under the arms. The dermatitis was pruritic, scaly and fissuring. There was oozing, and the margins of the lesions were extremely erythematous but not indurated. There was practically no limitation of motion in the joints.

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[4] Carleton, A. B., and others: The Treatment of Complications of Arseno-Therapy with BAL (British Anti-Lewisite), J. Clin. Investigation **25:** 497 (July) 1946. Eagle, H.: The Systemic Treatment of Arsenic Poisoning with BAL (2,3-Dimercaptopropanol), J. Ven. Dis. Inform. **27:** 114 (May) 1946.

[5] (*a*) Gilman, A.; Allen, R. P.; Philips, F. S., and St. John, E.: The Treatment of Acute Systemic Mercury Poisoning in Experimental Animals with BAL, Thiosorbitol and BAL Glucoside, J. Clin. Investigation **25:** 549 (July) 1946. (*b*) Longcope, W. T., and others: The Treatment of Acute Mercurial Poisoning by BAL, ibid. **25:** 557 (July) 1946.

[6] American Work on BAL, editorial, Nature, London **157:** 218 (Feb. 23) 1946.

[7] McCance, R. A., and Widdowson, E. M.: Observations on the Administration of BAL-Intrav to Man, Nature, London **157:** 837 (June 22) 1946. McDonald, I. W.: Effect of BAL-Intrav on Excretion of Copper by the Sheep, Nature, London **157:** 837 (June 22) 1946.

[8] Peters, R. A.; Stocken, L. A., and Thompson, R. H. S.: British Anti-Lewisite (BAL), Nature, London **156:** 616 (Nov. 24) 1945.

[9] Supplied by Hynson, Westcott & Dunning, Inc.

[10] Danielli, J. F.; Danielli, M.; Mitchell, P. D.; Owen, L. N., and Shaw, G.: Development of a Chemotherapy for Systemic Arsenical Poisoning, Nature, London **157:** 217 (Feb. 23) 1946.

On March 15, 1946, ten minutes after the fifth injection of BAL (2 cc. of the 10 per cent solution) there developed shooting pain down the arms and legs of the patient, decidedly injected conjunctivas, flushing of the face, burning sensation in the mouth and salivation. All these symptoms disappeared in three hours except the flushing of the face, which lasted for twelve hours. BAL was withheld for nineteen hours, and then therapy was resumed using a dose of 1 cc. of the 10 per cent solution. No further reactions were encountered. After nine doses of 1 cc. BAL every four hours, the patient was again given an injection of 2 cc. of the solution, and there promptly developed another reaction similar to that of March 15. The blood pressure at the initiation of treatment with BAL was 140 systolic and 100 diastolic; several days after the start of BAL therapy it was 130 systolic and 80 diastolic. The plasma carbon dioxide content was 49 volumes per cent. Under BAL therapy there was prompt disappearance of the exfoliative dermatitis, although scaling from the affected areas continued for some days following treatment.

Case 3.—D. S., a white woman aged 55, complained on March 12, 1946 of pain and swelling in all her joints. The condition was stated to have commenced about twenty years previously in her hands. There was great pain and stiffness of the joints, which was more pronounced in the mornings. The patient was able to walk only when she was assisted and then with considerable difficulty. The physical examination disclosed emaciation of the patient, whose stature was 4 feet 11 inches (150 cm.) and whose weight was 92 pounds (41.7 Kg.). The tongue was atrophic and red, the heart and lungs were normal. The blood pressure was 160 systolic and 90 diastolic. The abdomen was scaphoid and indicated considerable loss of weight. The skin over the abdomen was loose and wrinkled. The extremities showed typical grade 4 rheumatoid arthritis. All joints seemed to be involved.

On examination of the blood, the hemoglobin content was 78 per cent; the erythrocytes numbered 3.9 million and the leukocytes 9,300; the sedimentation rate was 48 mm. (Westergren, 1 hour) and the blood urea nitrogen was 19.5 mg. per hundred cubic centimeters.

The patient received a course of an organic gold compound [11] in the dosage of 10 mg. twice a week for four doses, 25 mg. twice a week for eight doses and 25 mg. a week for nine doses, a total of 445 mg. During the course of this therapy the patient also received 10 units insulin twice a day after meals to encourage appetite. Her weight was quickly increased to 103 pounds (46.7 Kg.), and the patient made a spectacular recovery, soon being free from pain. Four weeks after receiving the last injection of gold intramuscularly, she reported to the hospital to complain of itching hands and feet. Examination revealed seborrheic dermatitis of the exfoliative type, which involved the webs of the fingers and extended up the backs of both hands. The toes and feet were similarly involved. There was bilateral cheilosis. Itching was generalized. Extract of liver was given intramuscularly for a few days, during which time the lesions grew so severe as to require the admission of the patient to the hospital. On admission, the dermatitis had extended to the wrists and ankles and was of the severe exfoliative seborrheic type on an extremely red base. There was intense itching and pain.

Since similar lesions previously had been seen sometimes to disappear spontaneously, it was decided to withhold BAL therapy for twenty-four hours. At the end of this time considerable improvement was noted, and BAL was withheld for another day. Twenty-four hours later, however, the lesions suddenly became worse and the patient was complaining bitterly. It was decided to give 1.5 cc. BAL in oil in a 10 per cent solution every four hours for twenty-four hours and then 1.5 cc. of the drug a day. After the second day of this treatment, the lesions began to subside. There were no untoward reactions to this dosage, and at the end of nine days the dermatitis had cleared and the patient was discharged. Four weeks later the patient was seen, and the skin was still clear. There was no evidence of rash, although there was complaint of occasional itching.

Case 4.—R. F., a white woman aged 40, was seen with a condition diagnosed as rheumatoid arthritis of the left shoulder and knee. Gold therapy [11] was administered as follows: 10 mg. on Jan. 17, 21, 24 and 28, 1946, and 25 mg. on Jan. 31; Feb. 4, 7, 11, 14, 18, 21 and 25; March 4, 11, 18 and 25, and April 1 and 8, 1946. At this time, the patient began to complain of soreness of the mouth and itching of the skin. Examination of the mouth revealed tiny ulcers over the soft and hard palates, on the buccal mucous membrane and sublingually. The patient reported on April 17 with intense pain in her entire mouth, and there was itching of the skin and considerable swelling of both lips. She was hospitalized immediately and given 2 cc. of BAL intramuscularly. This dosage was repeated every four hours during the day and night until ten doses had been given. After almost every injection the patient had pain which extended down both arms and had excessive salivation. After the fifth injection of BAL the itching of the skin had disappeared. There were no cutaneous lesions. Subsequent to the ten doses of 2 cc. BAL, the dosage was reduced to 1 cc. and continued until April 23. She received thirty-three injections of 1 cc., thus making a total BAL dosage of 53 cc. After the tenth injection of 2 cc. of the solution there was pronounced relief of the oral symptoms. There was still evidence of ulceration on April 22, 1946, but there was a decided diminution in the size and the severity of the buccal ulcerations, and the patient was so comfortable as to request discharge. At this time the hemoglobin level was 85 per cent; the erythrocytes numbered 4.3 million and the leukocytes 7,500, with 62 per cent polymorphonuclears and 38 per cent lymphocytes.

The response of this patient to BAL therapy was dramatic, as it is unusual for such a severe oral reaction to abate in so short a period. It is believed that BAL can be credited with the prompt subsidence of symptoms.

Case 5.—F. M., a white woman aged 65, on May 5, 1945 complained of pain and swelling in both knees, wrists and ankles for the past six months. The rest of her history was irrelevant, except that a diagnosis of rheumatoid arthritis was made and a course of gold therapy [11] was suggested. Accordingly, the patient received 10 mg. of the metallic compound for four doses given intramuscularly, 25 mg. for six doses and 50 mg. for four doses, a total of 390 mg. At this stage dryness of the mouth developed, and 4 units crude extract of liver was administered intramuscularly in place of gold twice a week. After four doses of the liver preparation the dryness of the mouth disappeared, and since articular improvement had been so favorable, gold therapy was resumed in a dosage not to exceed 25 mg. The course was completed with seven doses of 25 mg. given at weekly intervals. In all the patient received a total of 565 mg. of the gold compound. At the end of the course of gold therapy the patient was much improved, although there was still some swelling and pain in the joints.

Examination of the blood on Feb. 26, 1946 revealed: hemoglobin 71 per cent; erythrocytes 3.63 million; leukocytes 10,400, and sedimentation rate 58 mm. (Westergren, 1 hour).

On April 10, 1946 the patient complained of a burning sensation in the eyes. Four units of crude extract of liver was given twice a week until July 8. There was little improvement in the ocular condition, but there was no increase in the symptoms. The patient began on July 10 to complain of severe pruritus, and 6 units of crude extract of liver was given intramuscularly. On July 12 the pruritus and conjunctivitis were considerably worse, and 6 units of crude extract of liver was given intramuscularly. Beginning July 17 2 cc. BAL was given intramuscularly every four hours for two days, a total of 24 cc. Subsequent to this the pruritus and conjunctivitis practically disappeared. There was no untoward reaction to the drug, 2 cc. of which was now administered daily. At the end of one week the pruritus and conjunctivitis had completely disappeared. The patient was last seen Oct. 25, 1946, and she reported that her joints were much improved and that the itching and the burning of her eyes had not recurred.

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[11] Solganal-B Oleosum, an oily suspension of aurothioglucose, an organic compound containing 50 per cent gold for intramuscular injection, was supplied by Dr. William H. Stoner, Schering Corporation, Bloomfield, N. J.

Case 6.—*M. B.*, a Negro woman aged 63, had generalized rheumatoid arthritis. From Oct. 30, 1945 to Jan. 17, 1946 the patient received 590 mg. of an organic gold compound;[11] the minimum dose was 10 mg. and the maximum dose 50 mg. Gold therapy was stopped on January 17 because of itching of the skin. The arthritis was much improved. On Feb. 6, 1946 the itching of the skin disappeared and gold therapy was resumed. The dosage was 25 mg. at semiweekly intervals for four doses and 50 mg. for two doses, a total of 790 mg. of the gold compound.

Examination of the blood on Feb. 23, 1946 disclosed a hemoglobin level of 75 per cent; the erythrocytes numbered 3.9 million and the leukocytes 2,500. At this time the patient complained of generalized itching of the skin, and gold therapy was discontinued.

Dermatitis developed March 4, 1946, and 4 units crude extract of liver was administered intramuscularly every other day. On March 15 seborrheic dermatitis of the exfoliative type extended over the face, neck, chest, back and legs. Until March 22 the dermatitis grew progressively worse, so BAL therapy was started. On March 22 and 23 the BAL dosage was 2 cc. every four hours for seven doses, a total of 14 cc. On March 24 and 25 the dosage was 2 cc. every four hours (waking hours only), a total of 16 cc. The pruritus was decidedly lessened. From March 26 to 31, 2 cc. BAL was administered twice a day, a total of 24 cc. At this time the patient complained of lacrimation and of pains in her muscles. From April 1 to 8 the dosage of the drug was 2 cc., a total of 16 cc. The dermatitis was materially improved, although scaling was pronounced. The dosage from April 9 to 22 was 1 cc. BAL twice a day, a total of 28 cc. The scaling had completely subsided. There was no more complaint of cutaneous itching, and the patient was relatively comfortable. The dosage from April 23 to May 5 was 1 cc. of the drug, a total of 14 cc. As there seemed to be no further need for BAL therapy, it was discontinued. Except for slight residual pigmentation of the skin the patient was completely recovered from the dermatitis, and she retained the improvement in regard to the articular symptoms.

This patient received 112 cc. BAL without severe untoward reactions. The degree of recovery from the gold intoxication is considered to be excellent.

SUMMARY

1. Five cases of acute poisoning due to gold and 1 of acute poisoning due to arsenic have been treated successfully with intramuscular injections of BAL (2,3-dimercaptopropanol).

2. Transient symptoms of BAL toxicity included a sense of warmth in the mouth, salivation, flushing of the face, conjunctival injection, lacrimation and pains in the arms and legs. It is suggested that the newer, less toxic BAL derivatives be employed in a study of toxic reactions to gold.

3. The number of cases reported here is too small to justify a definitely favorable interpretation of results, yet the prompt clinical effects are impressive and warrant more extended use of this drug in the relief of gold intoxications, so that eventually chrysotherapy of rheumatoid arthritis may be employed more generally and with less fear of the otherwise devastating toxic reactions.

THE TREATMENT OF GOLD DERMATITIDES

Use of BAL (2,3-Dimercaptopropanol)

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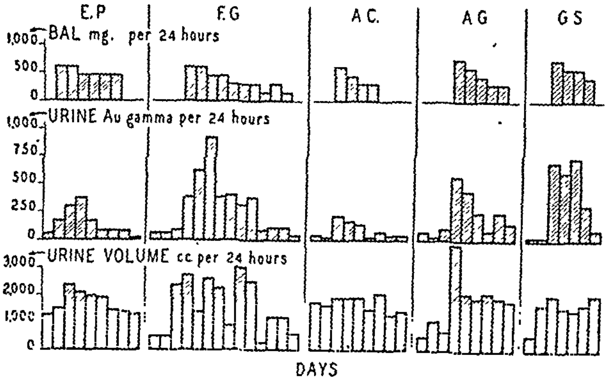
In the past ten years much has been done with gold therapy in the treatment of rheumatoid arthritis. The work of Freyberg[1] and his associates on the metabolism of gold and numerous reports on chrysotherapy by other workers[2] have simplified the problem of gold administration to a certain extent. However, the use of gold compounds in the treatment of rheumatoid arthritis remains on an empiric basis and is still far from universally accepted.[3]

Toxic reactions to gold have been a serious deterrent to its use in therapy. Even under the most careful clinical supervision, the administration of gold to human subjects continues to be attended with definite hazards. The occurrence of certain manifestations of toxicity—notably the dermatitides—cannot be predicted by any known clinical or laboratory method.[4] It is therefore important to control these reactions rapidly once they develop. In certain patients we have been able to stop the pruritus and favorably influence dermatitis due to gold with BAL (2,3-dimercaptopropanol), and it is the purpose of this paper to describe our results.



Excretion of gold in the urine following the administration of BAL (2,3-dimercaptopropanol).

During the war interest was centered on drugs which might counteract the toxic effects of the trivalent arsenical compounds used as antipersonnel agents in the form of lewisite and similar gases. The hypothesis had been formulated that the toxic effects of trivalent arsenical compounds were due to inactivation by arsenic of the sulfhydryl group in enzyme proteins in the host and that the therapeutic effect of arsenic in syphilis was due to a similar affinity for a sulfhydryl group in

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From the Edward Daniels Faulkner Arthritis Clinic of the Presbyterian Hospital and the Department of Medicine, Columbia University College of Physicians and Surgeons.

[1] Freyberg, R. H.; Block, W. D., and Levey, J.: Metabolism, Toxicity and Manner of Action of Gold Compounds Used in the Treatment of Arthritis, J. Clin. Investigation **20:** 401, 1941.

[2] Sundelin, F.: *Die Gold Behandlung der chronischer Arthritis unter besonderer Berücksichtigung der Komplikationen*, Acta med. Scandinav., 1941, supp. 117, p. 1.

[3] Short, C. L.; Beckman, W. W., and Bauer, W.: Medical Progress: Gold Therapy in Rheumatoid Arthritis, New England J. Med. **235:** 362, 1946.

[4] (*a*) Ragan, C., and Tyson, T. L.: Chrysotherapy in Rheumatoid Arthritis, Am. J. Med. **1:** 252, 1946. (*b*) Sundelin.[2]

the Treponema pallidum.[5] An effort was therefore made to find a drug which would compete effectively for arsenic with the sulfhydryl groups in the various proteins of the body. It was essential that the compound formed with arsenic be inert and that it be excreted promptly.[6] This led to the development of 2,3-dimercaptopropanol, commonly known as British anti-Lewisite, or BAL,[7] which was found to bind arsenic rapidly. It was soon discovered that, to be effective, BAL must be administered soon after the arsenic combined with the sulfhydryl enzymes, otherwise the effect of the metal on the enzyme became irreversible.

Investigation with BAL was extended to other heavy metals, including mercury.[8] In one, cadmium,[7a] the compound formed between the drug and the metal was found to be toxic and to cause appreciable renal damage.

Since we were dealing with a heavy metal in the use of gold compounds in rheumatoid arthritis, we felt that a study of the effects of BAL in toxicity due to gold was indicated. Preliminary studies were made with rats, which were given gold and, after an interval, treated with the drug. No toxic effects similar to those observed with cadmium were found. Sections of kidney, heart and liver of these animals were not abnormal.[9] These results seemed to justify a trial of BAL on human subjects.

RESULTS

Five patients with dermatitis due to gold were treated with BAL.[10] The patients were on the wards of the Presbyterian Hospital. Twenty-four hour specimens of urine were collected, and the concentration of gold in the urine was determined by a modification of the method of Block and Buchanan.[11] All 5 patients showed a definite increase in the excretion of gold in the urine coincident with treatment with BAL (see the accompanying chart).

In 4 patients who had had a rash due to gold for less than two months prior to treatment with BAL there was a prompt subsidence of pruritus with rapid clearing of the rash within a month. The fifth patient (F. G.), who had an extensive rash which had been present for three months before treatment, noticed no change in the itching; the rash was resistant to BAL therapy. At present, eleven months after onset, it is clearing slowly after radiotherapy (see the accompanying table). This patient presumably was treated after the toxic changes produced by the gold had become irreversible, since the excretion of gold was equal to or greater than that found in the patients who showed a satisfactory clinical response.

Four patients (E. P., A. C., A. G. and G. S.) were free of symptoms of arthritis while the rash due to gold was maximal; the fifth, F. G., continued to have some pain in the joints. Within a month after treatment with BAL 4 patients (E. P., A. C., A. G. and F. G.) showed an exacerbation of their articular symptoms; the fifth, G. S., had finished BAL therapy only two weeks before this writing. It is our impression based on these observations that the administration of this drug may cause an early relapse of rheumatoid arthritis in patients who are in remission following chrysotherapy. Objective evidence for this has been difficult to obtain because an elevated sedimentation rate may accompany a rash due to gold. This is a small group of patients, and spontaneous remissions and relapses are the rule in this disease.

Response of Gold Dermatitis to Treatment with BAL

Patient	Total Gold Compound, Mg.	Total Metallic Gold, Mg.	Date Last Gold Administered	Date of Onset of Rash	Date of Start of BAL Therapy	Interval Between Administration of BAL and Onset of Rash, Days	Total BAL, Mg.	Day of BAL Therapy That Pruritus Ceased	Clearing of Rash After Start of BAL Therapy
E. P.	1,050	525	1/ 2/46	1/18/46	1/21/46	3	2,400	1st	6th day
F. G.	1,000	500	12/11/45	12/20/45	3/25/46	95	3,300	Not affected	Still present 8 mos. after treatment
A. G.	385	193	8/20/46	9/ 3/46	9/23/46	20	2,700	1st	Clearing rapidly 1 mo. after BAL
A. O.	355	173	7/ 3/46	7/14/46	8/ 8/46	25	1,650	3d	7th day
G. S.	385	193	8/26/46	9/ 6/46	10/31/46	54	2,400	1st	2 weeks

These observations may throw some light on the mechanism of the action of gold in rheumatoid arthritis and on the development of toxicity following its use. Since it is known that BAL reactivates sulfhydryl enzyme systems poisoned by heavy metals, the dramatic relief of pruritus and gold rash with BAL would seem to indicate that the development of rash with pruritus following chrysotherapy is due to the toxic effect of gold on some enzyme system containing a sulfhydryl group. The recurrence of arthritic symptoms after the rapid elimination of gold brought about by BAL would further suggest that the therapeutic effect of gold is a temporary suppression of the processes which cause activity in rheumatoid arthritis. This is consistent with our observation of the high rate of relapse in patients subsequent to gold compound therapy.[4a]

SUMMARY

1. In rats the administration of BAL (British Anti-Lewisite, 2,3-dimercaptopropanol) and gold was not followed by toxic effects.

2. The drug was used to treat 5 patients with dermatitis due to gold.

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[5] Eagle, H.; Magnuson, H. J., and Fleischman, R.: Clinical Uses of 2,3-Dimercaptopropanol (BAL): I. The Systemic Treatment of Experimental Arsenic Poisoning (Mapharsen, Lewisite, Phenyl Arsenoxide) with BAL, J. Clin. Investigation **25:** 451, 1946. Carleton, A. B.; Peters, R. A.; Stocken, L. A.; Thompson, R. H. S.; Williams, D. I.; Storey, I. D. E.; Levey, G. A., and Chance, A. C.: Clinical Uses of 2,3-Dimercaptopropanol (BAL): VI. The Treatment of Complications of Arsenotherapy with BAL, ibid. **25:** 497, 1946.

[6] Wexler, J.; Eagle, H.; Tatum, H. J.; Magnuson, H. J., and Watson, E. B.: Clinical Uses of 2,3-Dimercaptopropanol (BAL): II. The Effect of Bal on the Excretion of Arsenic in Normal Subjects and After Minimal Exposure to Arsenical Smoke, J. Clin. Investigation **25:** 467, 1946.

[7] (*a*) Peters, R. A.; Stocken, L. A., and Thompson, R. H. S.: British Anti-Lewisite, Nature, London **156:** 616, 1945. (*b*) Waters, L. L., and Stock, C.: BAL (British Anti-Lewisite), Science **102:** 601, 1945.

[8] Longcope, W. T., and Luetscher, J. A.: Clinical Uses of 2,3-Dimercaptopropanol (BAL): XI. The Treatment of Acute Mercury Poisoning by BAL, J. Clin. Investigation **25:** 557, 1946. Gilman, A., Allen, R. P.; Phillips, F. S., and St. John, E.: Clinical Uses of 2,3-Dimercaptopropanol (BAL): X. The Treatment of Acute Systemic Mercury Poisoning in Experimental Animals with BAL, Thiosorbitol, and BAL Glucoside, ibid. **25:** 549, 1946.

[9] Dr. Joseph E. Flynn of the Department of Pathology examined these sections.

[10] Dr. Harry Eagle of the Johns Hopkins Hospital and the United States Public Health Service kindly furnished us with our original supply of BAL before it became generally available.

[11] Block, W. D., and Buchanan, O. H.: The Microdetermination of Gold in Biological Fluids, J. Biochem. **136:** 379, 1940

3. In all 5 patients there was a significant excretion of gold in the urine coincident with the administration of this drug.
4. In 4 patients in whom the dermatitis had existed for less than two months the pruritus ceased and the rash cleared under treatment with BAL. In 1 patient in whom the rash had existed for three months the pruritus continued, as did the rash.
5. It is suggested that a gold rash is due to the toxic effect of gold on an enzyme system containing a sulfhydryl group.
6. Four patients had an increase in their symptoms of rheumatoid arthritis within a month following the administration of BAL. The fifth has just finished BAL therapy.
7. This is construed as further suggestive evidence that the therapeutic effect of gold is a temporary suppression of the processes which cause activity in rheumatoid arthritis.

TREATMENT OF TWO REACTIONS DUE TO GOLD

Response of Thrombopenic Purpura and Granulocytopenia* to BAL Therapy

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The use of gold salts in the treatment of rheumatoid arthritis is not without danger. We have encountered an incidence of toxic reactions of about 20 per cent. Among the frequent reactions are dermatitis, stomatitis and glossitis. Those less frequent in our experience are colitis, albuminuria, hematuria, nephrosis, purpura and granulocytopenia. The treatment of the more serious reactions (nephrosis, exfoliative dermatitis, purpura and granulocytopenia) has been unsatisfactory, and fatalities have occurred in the past. Recently, when we encountered 2 reactions (thrombopenic purpura and granulocytopenia), it was decided to employ BAL (British Anti-Lewisite, 2,3-dimercaptopropanol), as this substance has been valuable in the treatment of other types of metallic poisoning (that due to arsenic and mercury).

Table 1.—*Hematologic Data in Case Two*

Date	Hemoglobin, Gm./100 Cc.	Red Blood Cell Count	White Blood Cell Count	Juveniles	Bands	Filaments	Eosinophils	Basophils	Lymphocytes	Monocytes	Plasma Cells	Platelets
9/13/46	7.4	2,900,000	4,400	..	27	14	..	..	55	4	..	174,000
9/20/46	7.2	3,000,000	2,100	..	17	10	..	..	68	5	..	....
9/25/46	7.6	2,900,000	2,800	..	1	19	..	1	63	6	..	....
10/ 2/46	8.3	3,300,000	2,100	..	6	15	2	2	72	3	..	250,000
10/ 8/46	9.2	3,400,000	2,900	..	3	4	2	1	81	6	3	....
10/12/46	10.2	3,500,000	2,100	1	2	1	1	1	81	13	..	290,000
10/14/46	....	....	3,000	..	2	..	..	1	82	15	..	....
10/14/46 BAL started												
10/15/46	10.9	3,900,000	1,800	..	1	..	2	1	72	24	..	250,000
10/16/46	....	....	3,000	..	1	..	1	1	83	14	..	....
10/17/46	11.2	4,000,000	2,800	2	13	1	1	..	41	42	..	....
10/19/46	....	....	2,300	1	28	10	..	..	47	14	..	....
10/21/46	11.9	4,200,000	3,700	1	24	30	..	..	31	14	..	270,000
10/22/46	....	....	6,400	1	19	23	2	..	50	5	..	....
10/23/46 BAL discontinued												
10/24/46	12.5	4,500,000	3,500	..	20	22	2	..	44	3	..	....
10/26/46	....	....	6,700	..	18	24	1	2	44	11	..	300,000

Remaining white blood cell counts and differential counts were essentially the same as on Oct. 26, 1946.

REPORT OF CASES

Case 1.—A white man aged 34, who weighed 160 pounds (72.6 Kg.), was seen in November 1945 with rheumatoid arthritis, which had been present since February 1945. He was started on gold therapy in January 1946 and was given gold sodium thiomalate (Myochrysine Merck) from Jan. 22, 1946 to April 30, 1946. Gold was administered intramuscularly at weekly intervals. The largest single dose was 40 mg., and the total amount of gold administered was 360 mg.

Table 2.—*Hematologic Data in Case One*

Date	Hemoglobin, Gm./100 Cc.	Red Blood Cell Count	Platelets
2/19/46....................	14.0	5,060,000	Normal
5/ 8/46....................	11.0	4,450,000	None
5/13/46....................	12.0	4,500,000	None
5/27/46....................	8.6	3,000,000	2,000
6/ 7/46....................	8.6	2,960,000	8,000
6/17/46....................	8.4	3,350,000	5,000
7/10/46....................	9.5	4,040,000	8,000
7/29/46....................	9.9	3,970,000	7,900
8/ 8/46 BAL started			
8/ 9/46....................	12.5	4,500,000	36,000
8/16/46....................	14.0	4,400,000	60,000
8/19/46 BAL discontinued			
8/21/46....................	12.0	4,360,000	52,300
8/31/46....................	8.6	3,200,000	120,000
9/ 9/46....................	9.6	3,300,000	150,000
9/23/46....................	12.5	4,400,000	130,000
10/29/46....................	....	....	80,000
11/18/46....................	14.4	5,000,000	130,000

White blood counts and differential counts normal; urinalyses negative

On May 8, 1946 the patient complained of bleeding from his gums, and a few purpuric areas were found on his arms and legs. Gold therapy was discontinued, and he was started on a regimen of extract of liver administered intramuscularly, with ascorbic acid and vitamin K given intravenously. Examination of the blood on May 8 failed to reveal any platelets. He was admitted to the hospital on May 10 and was there until June 10. During his hospital stay, he was treated with repeated transfusions of blood, folic acid and massive parenteral vitamin therapy. There was a slight improvement of the bleeding time and platelet count and of the bleeding phenomena clinically. From June 10 to August 8 he continued to have some bleeding from his gums and a few purpuric and petechial spots on his body. Several blood counts were performed in this period. The number of platelets was exceptionally low in every count, and the bleeding time remained prolonged. Repeated urinalyses were normal.

About July 10 the patient began to complain of severe headache. No neurologic signs could be determined on repeated examinations. He refused to return to the hospital until

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July 31, when he was admitted for three blood transfusions. He was discharged on August 3, with no complaints. On August 7 he again complained of a severe headache, and on August 8, after he was seen at home in a comatose state, he was readmitted to the hospital. The neurosurgeon diagnosed a subarachnoid hemorrhage and diffuse petechial intracerebral hemorrhages due to the thrombopenia. The pressure of the spinal fluid was elevated (360 mm. of water), and there was a faint xanthochromic color to the fluid. Because of the critical condition of the patient and his failure to respond to all previous treatment, BAL therapy was instituted on August 8. He was given 1.8 cc. (180 mg.) of a 10 per cent solution of BAL in oil [1] intramuscularly every four hours for the first forty-eight hours and then 1.8 cc. of the drug twice a day for ten days. Within twenty-four hours after the initiation of BAL therapy the patient was conscious, responded well and showed no further evidence of any cerebrovascular disturbance. His spectacular improvement has been maintained to the present time. Subsequent to BAL therapy, the platelet count increased from about 15,000 to 120,000, and there has been no evidence of any bleeding phenomena or neurologic disturbance. The last platelet count, on November 18, was 130,000.

During this patient's course of BAL therapy there developed inflammation (redness, heat, pain and induration) of the right buttock, which subsided in forty-eight hours under conservative treatment. No other reaction was encountered. Representative hematologic data are given in table 2.

CASE 2.—A white man aged 54, who weighed 117 pounds (53 Kg.), was seen in September 1946 with severe generalized rheumatoid arthritis of six years' duration. He was hospitalized on September 13 and was started on intensive therapy (including gold, transfusions of blood, physiotherapy and roentgen therapy to several joints). He was given gold sodium thiomalate, 10 mg. at two day intervals, receiving a total of 140 mg. intramuscularly between September 13 and October 8, when it was discontinued because of granulocytopenia. BAL therapy was instituted on the afternoon of October 14, when the granulocytopenia became worse (only 3 granular cells were present) and the patient began to feel ill. He was given 1.4 cc. (140 mg.) of the solution of BAL [1] intramuscularly every six hours for the next forty-eight hours and then 1.4 cc. twice a day for eight days. At the end of seventy-two hours (October 17) the patient felt greatly improved, and apparently a satisfactory response to BAL therapy had occurred. Within this period the granulocytes increased to 17 cells. By October 23 an average of 45 granular cells was present. This patient has maintained a normal differential count. Representative hematologic data are given in table 1.

An abscess of the left buttock at the site of injection was incised and drained of a large amount of purulent material.

SUMMARY

Two serious reactions (thrombopenic purpura and granulocytopenia) to gold salt therapy have been described. Spectacular recovery occurred in each instance. The usual course of such complications appears to have been definitely altered by BAL (2,3-dimercaptopropanol) therapy. No change in the status of the arthritis occurred.

A possible complication was the incidence of inflammation of the buttock in case 1 and a gluteal abscess which required drainage in case 2.[2]

BAL therapy deserves further trial in the treatment of reactions caused by gold salts.

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[1] The dosage of BAL (supplied by Hynson, Westcott & Dunning, Inc.) was calculated on the basis of 2.5 mg. of the drug per kilogram of body weight.

[2] Carleton, A. B.; Peters, R. A.; Stocken, L. A.; Thompson, R. H. S., and Williams, D. I.: Clinical Use of 2,3-Dimercaptopropanol (BAL): The Treatment of Complications of Arseno-Therapy with BAL (British Anti-Lewisite), J. Clin. Investigation **25**: 497 (July) 1946.

PERONEAL PALSY CAUSED BY CROSSING THE LEGS

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Of the peripheral nerves closest to the surface, least protected and most vulnerable to both acute and chronic trauma, the common peroneal nerve ranks high. Thus, Wilson [1] places it second only to the musculospiral and ulnar nerves for frequency of damage, while it stands first in Cassirer's [2] series of over 1,000 cases. This nerve is particularly susceptible to injury not only where it runs its independent course but even as it runs side by side with the tibial nerve in the sciatic trunk. For example, among 71 cases of wounds of the sciatic nerves studied by Stewart and Evans (quoted by Wilson [1]), signs were restricted to the peroneal nerve in 33 cases and in only 3 to the tibial. Between 10 and 15 per cent of all injuries of the peripheral nerves, according to Clark,[3] involve the common peroneal nerve.

Because of its anatomic relationships, the nerve is particularly exposed to injury, both of the pressure and the tension variety, as it bends around the neck of the fibula. At this point both the main stem and its two branches, the deep and superficial peroneal nerves, are thinly covered and therefore easily subject to the effects of direct pressure. Furthermore, the common peroneal nerve being relatively fixed, flexion at the knee exerts abnormal tension on it, while at the same time it compresses the nerve against the neck of the fibula. Thus the nerve suffers the effects of both pressure and traction from such positions as crouching, squatting or kneeling, which accounts for the long-recognized occurrence of peroneal palsy as an occupational neuritis in trades or occupations requiring the adoption of these positions. Thus it has been known to occur commonly in miners, agriculturists and coal pickers.[4] More obvious cases of palsy due to pressure on the peroneal nerve result from the application of casts [5] or adhesive plaster,[6] or are secondary effects of positions on the operating table,[7] as in protracted labor. Persistent strain or continuous repetition of movement may induce "neuritis," according to Wilson,[1] especially when there is a preexisting toxicosis. Thus, Wilson has seen foot drop develop after long hours at the treadle of a sewing machine in the case of a woman suffering from rheumatism.

The advent of war with the numerous new occupations which it has engendered has led to the assumption of new occupational positions, some of which are inevitably traumatic to susceptible peripheral nerves. Laird and Mueller [8] have described peroneal palsy, partial and temporary, in bombardier cadets subsequent to their kneeling over the bomb sights on long bombing missions. They point out that in that position the circulation to the leg is decreased simultaneously with the subjection of the peroneal nerve to abnormal tension. We have had the opportunity to see a number of cases of unilateral peroneal palsy occurring in persons in various types of military occupations, particularly in air crew technicians. Eight cases of peroneal paralysis have been collected, while many more have been seen in which there were only mild subjective sensory phenomena. The occurrence of this complication in a new and constantly growing occupation is worth reporting and pointing out to aid in quick recognition in the future and in prompt institution of remedial measures.

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[1] Wilson, S. A. K.: Neurology, edited by A. N. Bruce, Baltimore, Williams & Wilkins Company, 1941, vol. 1, pp. 345-346.

[2] Cited by Wilson.[1]

[3] Clark, D. F.: External Popliteal Nerve Injuries, Illinois M. J. **58**: 117-121 (Aug.) 1930.

[4] Alpers, B. J.: Clinical Neurology, Philadelphia, F. A. Davis Company, 1945, p. 183.

[5] Freund, E.: Peroneal Lesions in Orthopedic Conditions, Am. J. Surg. **44**: 387-389 (May) 1939.

[6] Selig, S.: Peroneal Paralysis Due to Compression by Adhesive Plaster, J. Bone & Joint Surg. **20**: 22-223 (Jan.) 1938.

[7] Woltman, H. W.: Postoperative Neurologic Complications, in Collected Papers of the Mayo Clinic and the Foundation, Philadelphia, W. B. Saunders Company, 1937, vol. 29, pp. 713-722.

[8] Laird, G. J., and Mueller, M. J.: Bombardier's Palsy, Air Surgeon's Bull. (no. 9) **1**: 19 (Sept.) 1944.

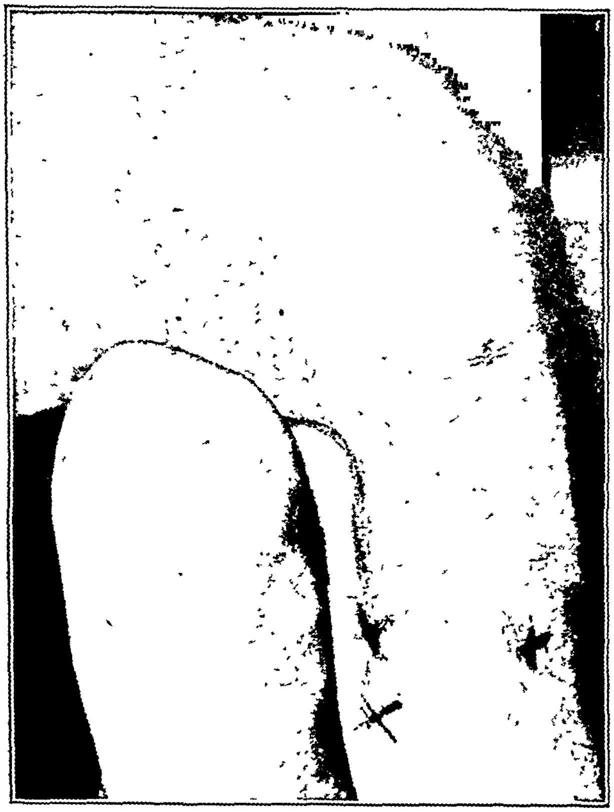

Fig 1.—Photograph of patient of case 1 with right leg crossed over left, the head and neck of the right fibula being outlined. It demonstrates the close opposition of this bone segment to the left patella and the external condyle of the left femur, the right common peroneal nerve being compressed between them.

Sitting with the legs crossed, a ubiquitous habit in modern man, is strikingly brought out as a common factor in producing the symptoms referable to the peroneal nerve in our observed cases. This habit, particularly prevalent in men, has been described a few times before as a factor in the production of peroneal palsy, but has for the most part been overlooked and neglected as a causal agent in this condition. Except for Gerhardt (quoted by Oppenheim[9]), who described a case in which peroneal palsy developed in a man who had fallen asleep with his knees crossed, Woltman[10] was the first really to direct attention to this etiologic factor. This author, in 1929, collected 27 cases from the files of the Mayo Clinic and stressed the importance of loss of weight, senility and protracted convalescence as prerequisites in the operation of this factor. Eaton[11] reported another case in 1937 in which "only after considerable loss of weight had the patient been able to cross the legs completely enough to traumatize the common peroneal nerve." This author also pointed out that failure to recognize the causation in his case almost led to needless laminectomy. Dunning[12] recently reported a case of bilateral peroneal palsy due to pressure from a long-standing habit of crossing the legs. This factor is also mentioned by Wilson,[1] who comments: "In view of the frequency with which sitting with pressure of one lower limb crossed on the other produces the feeling that the leg or foot has gone to sleep, it is curious how seldom genuine sleep palsies of the kind have been reported."

Our experience with the cases to be reported and our questioning of many persons who chronically sit with their legs crossed have revealed that this factor is much more commonly operative than hitherto supposed and should be suspected in every case of peroneal palsy, particularly of the unilateral type. Often a combination of factors produces damage of the peripheral nerves. The following 8 cases, which emphasize a rather interesting group of such causal factors, are believed not only to be of significance for military medicine, but to have general neurologic interest and importance

REPORT OF CASES

Case 1.—A 33 year old radio mechanic and operator was admitted to the hospital in May 1944 because of inability to raise his right foot. A month before, while he was sending and receiving code, the top of his right foot up to the ankle "went to sleep." He had been sitting for about an hour with legs crossed, the right knee uppermost and wedged beneath the table top. When he stamped about to "awaken" his foot, he first noted that he was unable to raise it. The paresthesia vanished in a short time and did not reappear, but the loss of motor power remained unchanged up to the time of admission

The patient volunteered that he habitually crossed his right leg over the left in sitting. This had occasionally resulted in brief tingling of the top of the right foot, but never in weakness. For six weeks prior to onset of the palsy the soldier had sat daily for several hours with his knees crossed and wedged beneath the table top. There was no history of alcoholism, exposure to lead or evidence of any other exogenous or endogenous neurotoxin.

Examination revealed a tall, asthenic man, 5 feet 11 inches (180.3 cm.) in height, weighing 165 pounds (74.8 Kg.). There was a steppage gait on the right, with motor disturbances typical of involvement of the common peroneal nerve but without sensory disturbances. Electrical studies revealed a partial reaction of degeneration in the muscles supplied by the right common peroneal nerve. When the patient sat with legs crossed in his habitual manner, it was readily observed that the right common peroneal nerve was compressed between the head of the right fibula on the one hand and the left patella and external condyle of the left femur on the other (fig. 1). The nerve was not thickened.

Comment.—A case of unilateral peroneal palsy, of apparently obscure causation at first, was readily explained on the basis of chronic pressure on the common peroneal nerve due to the habit of sitting with legs crossed. For years the nerve had been repeatedly traumatized, but a warning paresthesia had prevented prolonged pressure. Under the stress of military activity, this signal of alarm had been ignored, resulting in the more damaging compression. Moreover, additional traumatizing pressure was produced by wedging the crossed legs beneath a table top. The action of toxins could be ruled out. A dissociated form of paralysis was present, which will be commented on later. It might be of interest at this point to mention that this patient's symptom was considered a conversion reaction and that he was treated psychotherapeutically and with narcotherapy for several weeks prior to the establishment of the correct diagnosis.

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[9] Oppenheim, H.: Diseases of Nervous System, translated by Edward E. Mayer, Philadelphia, J. B. Lippincott Company, 1900, p. 277.

[10] Woltman, H. W.: Crossing the Legs as a Factor in the Production of Peroneal Palsy, J. A. M. A. **93:** 670-672 (Aug. 31) 1929

[11] Eaton, L. M.: Paralysis of the Peroneal Nerve Caused by Crossing the Legs: Report of Case, Proc. Staff Meet., Mayo Clin. **12:** 206-208 (March 31) 1937.

[12] Dunning, H. S.: Injury to the Peroneal Nerve Due to Crossing the Legs, Arch. Neurol. & Psychiat **51:** 179-181 (Feb.) 1944.

Case 2.—A 37 year old soldier was seen in consultation in June 1944 because of a left foot drop of six months' duration. The condition was first noted a month after the soldier's induction with gradual weakness of the left foot and numbness of the lateral aspect of the left leg. There were no other neurologic symptoms. There was a history of alcoholism in the past, but there had been no drinking for eight years prior to the present complaints. There was no evidence for any other exogenous or endogenous toxins. For three or four months prior to his induction the soldier had been a milking machine operator, kneeling in a squatting position during almost the entire working day. More significantly the soldier admitted a life-long habit of crossing his legs while sitting, practically always the left over the right. It is of interest that he had been in several other hospitals because of his foot drop, and efforts were made to rule out a clinical suspicion of a lesion of the spinal cord.

Examination revealed a tall, angular man, 6 feet 1½ inches (186.7 cm.) tall, weighing 172 pounds (78 Kg.). Neurologic examination demonstrated the classical motor and sensory disturbances of involvement of the left common peroneal nerve. This nerve was palpable and definitely thickened in its course lateral to the neck of the fibula. Electrical studies showed a partial reaction of degeneration in the involved muscles. When the patient sat with the left leg crossed over the right as he habitually did, it was readily demonstrated that the left common peroneal nerve was compressed between the neck of the left fibula on the one hand and the right patella and external condyle of the right femur on the other (fig. 2).

Comment.—In this case the seemingly harmless habit of sitting with crossed legs resulted in a vulnerable peroneal nerve, which finally succumbed to added insult. Prolonged tension on the nerve due to the constant squatting posture in the operation of the milking machine and similar positions assumed during basic training were sufficient to produce the disabling neuropathy. It is unlikely that the patient's long past alcoholism played any causal role.

Case 3.—A 44 year old airplane mechanic was seen in consultation in July 1944 because of difficulty in walking due to a right foot drop of eighteen months' duration. The patient also occasionally noted "numbness" of the dorsum of the right foot and the lateral aspect of the right leg. The symptoms had been stationary for the last year.

The patient was a moderate user of alcohol, rarely to intoxication. From 1929 to 1932 he had as a painter been exposed to lead but had had no apparent effects. During the past two years his military occupation had required the assumption for considerable periods of kneeling, crouching and squatting positions, all such as to result in prolonged tension on the peroneal nerves. When specifically questioned, he disclosed his habit of sitting with legs crossed, almost always with right over left.

The patient was an asthenic man, 5 feet 7 inches (170.2 cm.) tall, weighing 146 pounds (66.2 Kg.). There was steppage gait on the right. Neurologic examination revealed the classical motor and sensory disturbances of involvement of the right common peroneal nerve. When the patient sat in his habitual manner, right leg crossed over left, the right common peroneal nerve was shown to be compressed between the neck of the right fibula on the one hand and the left patella and external condyle of the left femur on the other.

Comment.—The moderate use of alcohol and the exposure to lead many years prior to the palsy cannot be considered causally relevant. The prolonged tension incident to occupational positions produced a traumatic neuritis in a nerve previously sensitized by chronic pressure due to the habit of sitting with legs crossed.

Case 4.—A 28 year old soldier was admitted to the hospital in August 1944 because of weakness of the right foot of three weeks' duration. At the time of its onset there was an evanescent numbness of the right leg. The patient had been an armorer and gun turret maintenance man at an Army Air Force base for nine months at the time his difficulty began. Because of his unusual height he had to assume awkward and cramped positions while working within the gun turrets. In addition his duties required him to work long periods in squatting, crouching and kneeling postures (fig. 3). Questioning elicited the presence of a life-long habit of sitting with legs crossed, almost always with the right over the left, which had frequently resulted in numbness and tingling of the right leg and foot. The patient had been drinking several bottles of beer daily for the past few years. There was no history of exposure to lead or other neurotoxins.

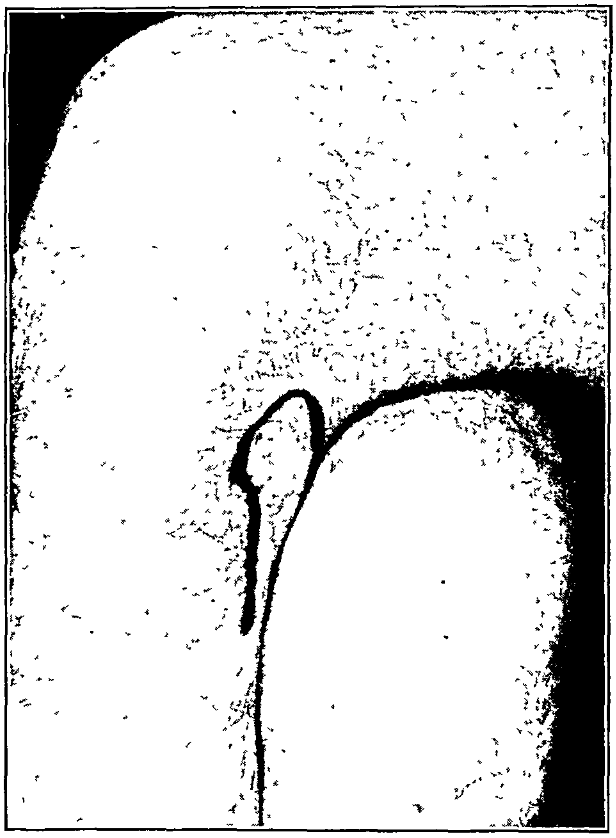

Fig. 2.—Photograph of patient of case 2 with left leg crossed over the right, the head and neck of the left fibula being outlined. It demonstrates the close opposition of this bone segment to the right patella and external condyle of the right femur, the left common peroneal nerve being compressed between them.

The patient was an asthenic, young man, 6 feet 4 inches (193 cm.) tall, weighing 184 pounds (83.5 Kg.) Neurologic examination revealed the typical motor and sensory disturbances of involvement of the right peroneal nerve. When the patient sat with legs crossed as was his wont, it was readily demonstrated that the right common peroneal nerve was pinched between the right fibula on the one hand and the left patella and the external condyle of the left femur on the other (fig. 5)

Comment.—A nerve subjected to the deleterious effects of repeated pressure finally succumbed to a final insult due to prolonged tension during occupational postures. The mild alcoholism probably did not contribute to the injury. This case demonstrates the wisdom of the height limitation imposed on gunners. A ball turret, as is well illustrated in figure 4, imposes a cramped and consequently nerve-traumatizing position on a tall occupant.

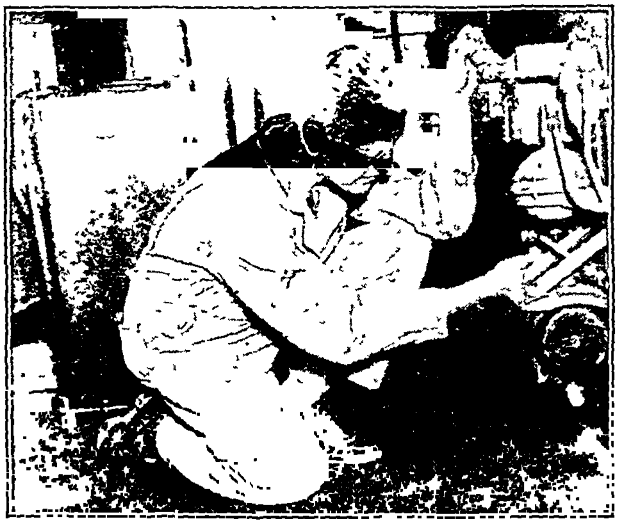

Fig 3.—Photograph of patient of case 4 in one of his working postures. In this kneeling position the vulnerable right peroneal nerve is subjected to traumatic tension.

Case 5.—A 38 year old artillery officer while serving on the Anzio beachhead in January, 1944, noted a "flapping" of his right foot in walking. This had been preceded by numbness along the lateral aspect of the right leg and dorsum of the right foot. Before his evacuation to the United States a functional diagnosis had been considered, but he was admitted with a diagnosis of peroneal palsy of undetermined origin.

Prior to the onset of his foot drop he had lost 27 pounds (12.2 Kg.) as a result of his combat experiences and many weeks on "iron rations." He had spent long periods in a *squatting position as artillery observer and at least three or* four hours daily sitting with the right leg crossed over the left as he rested a map board on his lap for study. He volunteered that it was his confirmed habit to sit with crossed legs, always the right over the left. This would frequently result in "sleepiness" of the right leg and foot. For many years in his civilian capacity as football coach he assumed the squatting position frequently. There was no history of chronic alcoholism.

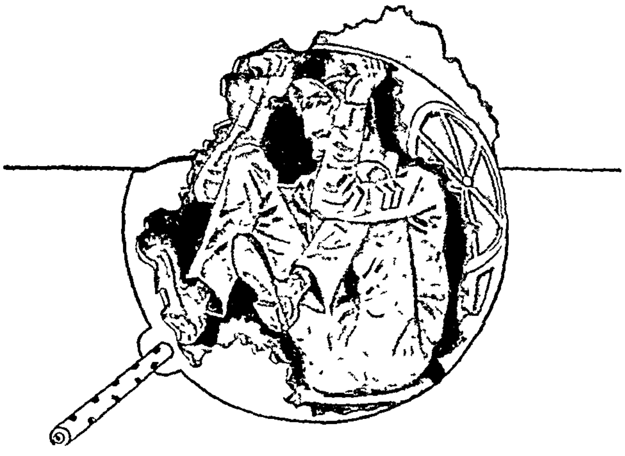

Fig. 4.—Drawing of a tall man, such as the patient of case 4, in a ball turret illustrates the awkward posture, which results in tension on the peroneal nerve

The patient was 5 feet, 10½ inches (179.1 cm.) tall, weighing 154 pounds (69 9 Kg.). There was a right steppage gait. Neurologic examination revealed only the typical motor and sensory disturbances of involvement of the right common peroneal nerve. This nerve was moderately thickened and, when the patient crossed his legs in his habitual manner, it *was seen to be compressed between the right fibula and the* left patella.

Comment.—This case illustrates the collaboration of several factors in the final production of the neuritis. To begin with, the common peroneal nerve had been rendered vulnerable by the habit of sitting with crossed legs and to a lesser extent by squatting for long periods as a football coach. As a result of the loss of weight the nerve was deprived of its protective covering and was more susceptible to the damaging effects of pressure incident to crossing the legs The tension on the nerve due to long periods of squatting and a possible nutritional deficiency per se were additional causal factors.

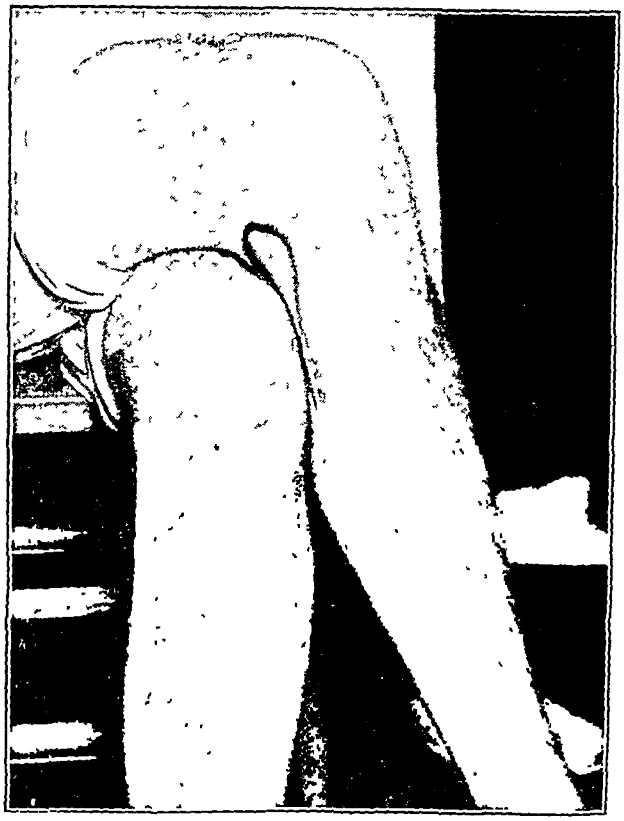

Fig 5.—Photograph of patient of case 4 with right leg crossed over the left, the head and neck of the right fibula being clearly outlined It well demonstrates the opposition of this bone segment to the left patella and the external condyle of the right femur, the right common peroneal nerve being tightly compressed between them.

Case 6—A 21 year old airplane instrument mechanic was seen in consultation in March 1945 because of a left foot drop About a year previously he had experienced symptoms of a left foot drop About a year previously he had experienced symptoms of a duodenal ulcer. He lost 25 pounds (11.3 Kg.) prior to his hospitalization in November 1944 because of his digestive symptoms His duty assignment as instrument mechanic had necessitated frequent crouching and squatting while working in the close quarters of the nose of planes. During his hospitalization from November 1944 to January 1945 he acquired the habit of sitting with legs crossed, left over right, while reading, playing cards, etc. *His foot drop developed* in January 1945. There was no history of alcoholism or exposure to any exogenous or endogenous toxins.

The patient was a thin, asthenic person, 5 feet 10 inches (177.8 cm.) tall, weighing 140 pounds (63.5 Kg.). Neurologic examination revealed the motor and sensory disturbances typical of involvement of the left common peroneal nerve. There was characteristic steppage gait on the left. When he crossed his legs, the left common peroneal nerve was seen to be compressed between the left fibula and the right patella.

Comment.—The habit of sitting with legs crossed conspired with several other factors in this case to produce a pressure neuritis of the left common peroneal nerve. First the nerve had been subjected to undue tensions during occupational positions. Then considerable loss of weight had robbed it of its protective fatty cover, making it more vulnerable to the deleterious pressure effects due to crossing the legs habitually. The nutritional disturbance incident to the peptic ulcer may have been a contributory cause.

CASE 7.—A soldier was admitted to the hospital in March 1945 because of a right foot drop of ten months' duration. At the time of onset he had completed six months of military service. He had had months of training during which crouching and squatting positions were frequent. He had also been on duty with a supply outfit and often had had to squat to obtain supplies from lower shelves. He had long had the habit of sitting with legs crossed, right over left, and would do so while reading or more recently while typewriting. The patient was only a mild social imbiber. There was no history of any other toxic influence.

Examination revealed a tall asthenic man, 6 feet 1 inch (185.4 cm.) tall, weighing 160 pounds (72.6 Kg.). Neurologic examination revealed no abnormalities except for the classical motor and sensory disturbances caused by damage of the right common peroneal nerve. When the patient demonstrated his habitual sitting position, the right common peroneal nerve was noted to be compressed between the head of the right fibula on the one hand and the left patella and external condyle of the left femur on the other.

Comment.—This case demonstrates again the combination of chronic pressure due to crossing of legs and of prolonged tension due to abnormal positions to produce a traumatic neuritis of the common peroneal nerve.

CASE 8—A 34 year old airplane mechanic was admitted to the hospital in August 1945 with widespread flaccid paralysis of all four extremities and a left facial palsy. After thorough study, a diagnosis was made of acute polyradiculoneuritis of Guillain-Barré with albuminocytologic dissociation in the spinal fluid His course in the hospital was one of gradual improvement and resumption of normal power. When seen seven months later, in March 1946, the patient had regained much of his strength, but the chief residual disability was a right foot drop.

Questioning revealed that for over a year prior to the onset of the acute infectious illness the patient had worked in squatting, crouching and kneeling positions as an airplane mechanic. It was further elicited that the patient was a habitual leg crosser, almost always with the right over the left. He had also been a heavy drinker for over fifteen years.

The patient was a thin asthenic man, 5 feet 11 inches (180 3 cm.) tall and weighing 145 pounds (65.8 Kg). Neurologic examination revealed mild residual evidence of widespread disease of the lower motor neurons, but the outstanding abnormality observed, out of proportion to the others, was a right peroneal palsy, with a steppage gait and the typical motor involvement Sitting with his legs crossed in the usual position showed the right common peroneal nerve tightly compressed between the right fibula on one side and the left patella and external condyle of the left femur on the other.

Comment.—In this case there was an acute and widespread infectious process involving the lower motor neurons and resulting in a generalized flaccid paralysis. Chronic severe alcoholism possibly played a causal role in predisposing the peripheral nervous system to infection. Of special importance, however, in determining that the last residual would be a unilateral peroneal palsy was the specific trauma to that nerve by leg crossing and by the traumatizing occupational positions. The multiplicity of causal factors is here well brought out.

COMMENT

Woltman[10] concluded from his series that "crossed leg palsy usually does not appear until the fourth or fifth decade, and is seen most often in patients who are forced into inactivity due to illness, and who have lost considerable weight." The average age of his patients was 51, and most of his patients had had a weight loss averaging 34 pounds (15.4 Kg.). The cases which we have reported demonstrate that middle age, arteriosclerosis and loss of weight with inactivity due to illness are not the prerequisites for the development of peroneal palsy due to crossing the legs.

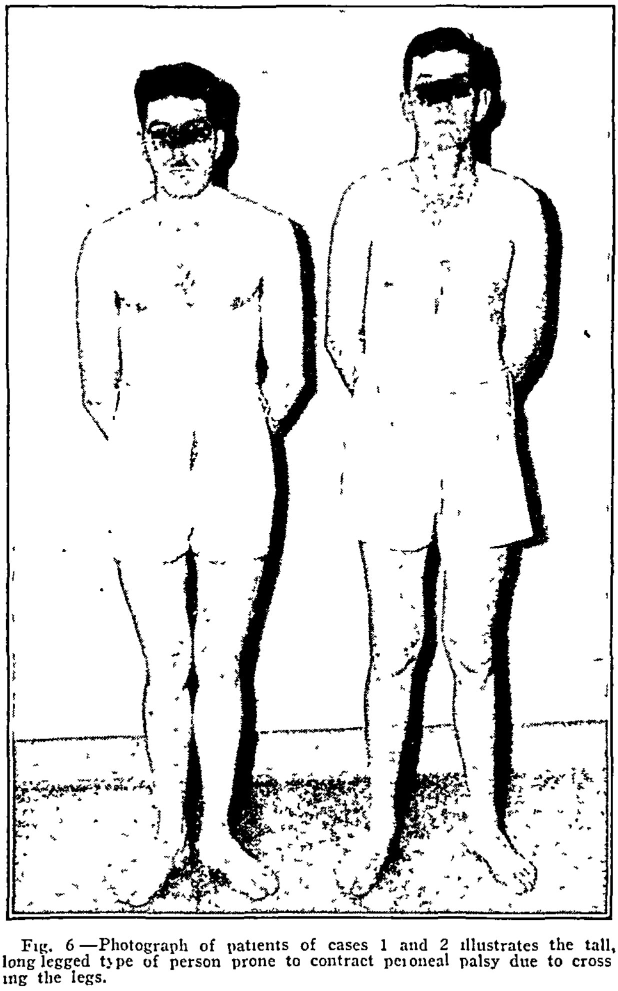

Fig. 6—Photograph of patients of cases 1 and 2 illustrates the tall, long legged type of person prone to contract peroneal palsy due to crossing the legs.

Our patients were predominantly healthy military personnel in active service, with an average age of 33½ years. Activity rather than inactivity played an important precipitating role. All the patients were engaged in military activities placing undue tension on the sensitized peroneal nerve. In only 2 cases did the factor of loss of weight have any causal relevance.

Evaluation of our cases clearly demonstrates that the most important predisposing factor for development of palsy in those who habitually cross their legs is the build of body. It is the tall, long-legged person who is prone to have palsy due to crossing the legs. Our patients were tall, relatively thin and long-legged men, with an average height of 5 feet 11½ inches (181.6 cm.) (fig. 6). Observation of numerous other subjects has shown us that the pyknic, short-legged person is rarely liable to traumatize chronically the peroneal nerve by habitual crossing of the legs. When such persons cross the legs, there is a distance of as much as 6 inches (15.2 cm.) between the neck of the fibula of the uppermost leg and the patella of the lower one (fig. 7). The athletic type or those with intermediate body habitus are also generally safe from this type of trauma to the peroneal nerve. It is the thin, "daddy-long-legs" type of person in whom this possibility should always be considered in evaluating a case of peroneal palsy.

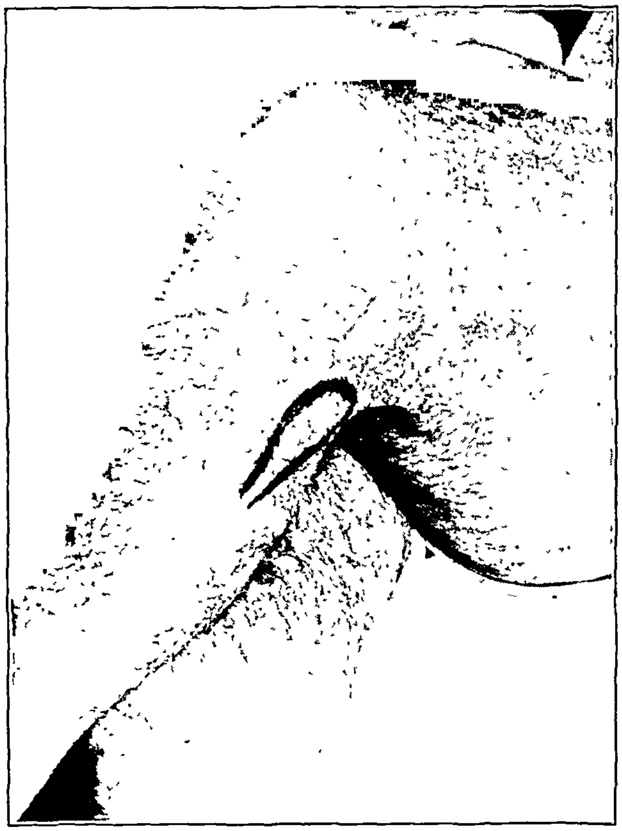

Fig. 7.—Photograph of the crossed legs of a pyknic, short-legged person. The head and neck of the left fibula are outlined to illustrate the long distance of this bone segment from the patella and the femoral condyle of the opposite limb, the common peroneal nerve thus being in no danger of compression.

Observation and discussion with many persons of this build clearly revealed that practically all these persons experience discomfort when crossing their legs in the form of paresthesia and other sensory disturbances along the distribution of the peroneal nerve. In most cases, however, these irritative sensory phenomena are a protective mechanism and lead to quick uncrossing of the legs. Symptoms of motor paralysis are likely to occur in such persons when for some reason this protective mechanism fails. Thus, in occupations in which these persons sit with their legs crossed for long periods while their attention is diverted, or when they fall asleep in this position, more serious symptoms are likely to occur. In many cases the chronic habit only sensitizes the nerve and makes it more vulnerable to later traumatic or toxic agents.

Whenever unilateral peroneal palsy occurs as the only manifestation of a toxic or other systemic disturbance, particularly in persons of the habitus described, the patient should be carefully questioned about sitting habits. Cases of isolated peroneal palsy have been described following the use of sulfapyridine[13] and other drugs.[14] It is not unlikely that in such cases the complication may be the result of the toxic effect of the drug on a nerve previously damaged and rendered vulnerable by the chronic pressure incident to the habit of crossing the legs. It is an extremely simple and expedient procedure in such cases to determine the presence of this factor, and thus readily to eliminate a major cause. Case 8 in our series is a case in point and illustrates the specific action of a generalized infectious process on a locally traumatized and vulnerable nerve.

We agree with Woltman in his description of the particular bones which are involved in exerting the viselike pressure. Our examinations have shown that the nerve is compressed between the head and the neck of the fibula of the uppermost leg on the one hand, and the patella and external condyle of the femur of the lowermost leg on the other. In some cases the patella forms most of the under jaw of the vise, while in others it is the external condyle of the femur which does. Our cases have not borne out the contention of Dunning, who in his case states that the peroneal nerve is compressed between the upper third of the shaft of the fibula of the uppermost leg and the head of the fibula of the lowermost leg.

Of the 8 patients reported on, all had been engaged in military duties requiring the daily assumption of occupational positions traumatic to the common peroneal nerve. It is interesting that of the 8 patients 5 were air crew technicians of various kinds, whose work took them into the cramped quarters of planes, where tall long-legged persons must assume awkward positions. This is a point worth remembering in choice of occupation.

Two of our 8 patients showed a dissociated form of paralysis, with motor but no sensory involvement. This type of disturbance following experimental compression of peripheral nerves has been described by Denny-Brown and Brenner,[15] who believe that the effect of pressure on a nerve is "due entirely to ischemia." When a mixed nerve is subjected to pressure, as noted by Fulton,[16] it is the motor fibers, which are the fibers of largest diameter, which are affected first, since these are most subject both to distortion and to deprivation of oxygen. In our cases ischemia of the nerve occurred because of direct pressure between the bony jaws of the vise as described and also, as in the case of the kneeling and squatting postures, by stretch in the long axis, which would tend to obliterate the vascular supply, which consists of extensive longitudinal anastomoses of vessels.[17]

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[13] Kruyk, K.: Peroneal Paralysis After Administration of Sulfapyridine (Sulfanilamide Derivative) in Child with Meningococcic Meningitis, Kinderärztl. Praxis **11:** 288-290 (Sept.) 1940.

[14] Roger, H.; Schachter, M., and Fournier, A.: Sciaticas After Intragluteal Injections of Bismuth; Case of Paralysis of External Popliteal Branch of Sciatic Nerve, Medicina, Madrid **9:** 172-178 (March) 1941.

[15] Denny-Brown, D., and Brenner, C.: Lesion in Peripheral Nerve Resulting from Compression by Spring Clip, Arch. Neurol. & Psychiat. **52:** 1-19 (July) 1944.

[16] Fulton, J. F.: Physiology of the Nervous System, ed. 2, London, Oxford University Press, 1943, p. 26.

Four of our patients were referred for consultation because the peroneal palsy was of obscure causation. In 1 case suspicion of disease of the spinal cord led to extensive investigation and almost to needless laminectomy, while in 2 others functional diagnoses were made and psychotherapy given for long periods prior to accurate diagnosis. We believe that if the causal factors demonstrated in the reported cases are kept in mind in considering obscure cases of peroneal nerve palsy, extensive investigations and perhaps even unnecessary laminectomies can be avoided.

A few final words in regard to therapy are in order. By prompt recognition and removal of the causal factors in a case of peroneal palsy due to crossing the legs, one can prevent serious neural damage. Some of our patients even while discussing their condition continued to assume the causative traumatic position. For these patients the deleterious effect of this seemingly innocent habit must be repeatedly stressed. Mechanical support of the foot, radiant heat, galvanism, and adequate nutrition with large doses of thiamine chloride were utilized. The therapeutic results were good.

SUMMARY AND CONCLUSION

Eight cases are reported of unilateral peroneal palsy occurring in healthy military personnel.

A common causal factor present in all 8 cases was the chronic habit of sitting with the legs crossed, which is shown to result, in persons of asthenic habitus, in a compression neuritis of the common peroneal nerve of the uppermost leg. This may either result in symptoms or may merely sensitize the nerve to other causal agents.

Another important causal factor in the reported cases was the assumption of various occupational positions incident to military duties and traumatic to the common peroneal nerve. The reported cases were mostly in air crew technicians.

These factors should be considered in all cases of unilateral peroneal palsy of apparently obscure causation.

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17. Adams, W. E.: The Blood Supply of Nerves: I. Historical Review, J. Anat. **76**: 323-341 (July) 1942.

Humoral Transmission of Vagal and Accelerator Effects.—Some few years ago Loewi performed a series of experiments which showed decisively that cardiac inhibition resulting from vagal stimulation is due to the liberation of a chemical substance possessing an action similar to that of acetylcholine. It was also shown that the augmentation and increase in heart rate which follow stimulation of the accelerators are due to the action of an adrenalin-like substance. His results have been confirmed by others. . . . It was later demonstrated by Loewi that the heart muscle contained an enzyme—cholinesterase—which rapidly hydrolyzed the ester after its liberation into the relatively inactive choline and acetic acid and so limited the duration of its action. The action of this esterase is inhibited by physostigmine (eserine). The effect of the latter drug in inhibiting the heart depends solely on this action. That is, it prevents the hydrolysis of the vagus substance, which therefore continues to exert its effect. . . . The known materials in the circulating blood which influence the action of the heart are (1) the mineral constituents calcium, potassium and sodium, (2) adrenalin, (3) acid metabolites—carbon dioxide and lactic acid—and (4) oxygen.—Best, Charles Herbert, and Taylor, Norman Burke: The Physiological Basis of Medical Practice, Baltimore, Williams and Wilkins Company, 1945, page 211.

Special Article

HISTORY OF THE AMERICAN MEDICAL ASSOCIATION

MORRIS FISHBEIN, M.D.
Editor, Journal of the American Medical Association
and Hygeia, the Health Magazine
Chicago

(Continued from page 691)

(Note.—*Following is the nineteenth chapter of a history of the American Medical Association, in process of development for publication in connection with the celebration of the Centennial of the American Medical Association in Atlantic City in June 1947.*

The general account of the history of the Association will be followed by individual histories of the various councils, bureaus publications and other activities of the Association. The general account is written by the editor of The Journal. *Each of the other historical contributions will be by a member of the individual council, bureau or agency responsible and now associated with it or directly related to its work. Included will be photographs, signatures and a brief biography of each of the hundred presidents of the American Medical Association. This feature has been prepared by Dr. Walter L. Bierring.*

It will be impossible to publish all of the material in The Journal. *The complete work will be published in book form It is hoped to have it available by the time of the annual session.*—Ed.)

CHAPTER 19. *The Medical Trust and Oligarchy?*

1910-1914

1910

ST. LOUIS

AN AUTOMOBILE NUMBER

By 1910 the motor car had become so definitely an important factor in the practice of medicine that The Journal of the American Medical Association issued its first automobile number. The section of The Journal devoted to this purpose appeared in the issue for April 9, 1910; it was entitled "The Choice and Care of an Automobile." It is, in the light of thirty-seven years of subsequent progress with this important appurtenance of medical practice, one of the most amazing collections of information in world history. There are many pictures of the vehicles of that day and some fascinating records of personal experiences of physicians with their vehicles. One section is devoted wholly to the motorcycle, with some debate as to whether or not doctors would do better with motorcycles than with automobiles. One article defends the gasoline propelled vehicle running on railroad tracks. The chapter on the business office pictures some of the advertisements.

THE MEDICAL TRUST?

During this year of the presidency of Dr. William H. Welch came the first organized attack on the American Medical Association as a medical trust. The proprietary medical interests had been so seriously damaged by the exposés which were being regularly published in The Journal of the American Medical Association that they established an agency known as the National League of Medical Freedom. This organization was designed to defeat the Owen bill for the creation of a national department of health but more particularly to discredit and disrupt the American Medical Association. Its attacks centered on the editor of THE JOURNAL, Dr. George H. Simmons. Detectives were employed to search out his past history, to follow him day by day and to muster public opinion against him. Among the leaders in these attacks were such names, now in excellent repute, as those of Dr. Abbott of the Abbott Laboratories and Mr. Post, inventor of the Post products, out of which has come the great corporation known as General Foods.

The attacks were bitter and vicious; full-page advertisements were purchased in newspapers throughout the nation; it became necessary for the editor of THE JOURNAL to answer them personally and publicly. This he did with a systematic analysis of the nature of the attacks and the powers behind them that carried conviction.

THE BOARD OF TRUSTEES

Incidentally for the first time THE JOURNAL published the minutes of an interim meeting of the Board of Trustees, so that the members of the Association might keep abreast of the increasing activities of this most powerful body in the affairs of the Association. By this time the multiple affairs of the Association had developed so greatly that Dr. M. L. Harris was drafted to prepare a form for presentation of the report of the Board of Trustees annually. This form was adopted and has been followed since that time.

THE AMERICAN JOURNAL OF DISEASES OF CHILDREN

The success of the American Medical Association with the publication of the ARCHIVES OF INTERNAL MEDICINE led to petitions for the publication of a journal devoted to pediatrics, presented by a committee consisting of Drs. Isaac Abt and F. S. Churchill. The Board of Trustees established a committee including such distinguished names as those of Drs. Abraham Jacobi, L. Emmett Holt and J. P. C. Griffith to investigate the need for such a publication.

A PERIODICAL ON PUBLIC HEALTH

From the Section on Preventive Medicine and Public Health and the Bureau of Medical Legislation came a request for publication by the American Medical Association of a periodical devoted to public health, for the establishment of scholarships in the field of preventive medicine and for similar purposes. It was proposed also that there be established a council to deal with problems of health and preventive medicine and to rate the public health work of the individual states. The council was to be called the Council on Legislation, Organization and Publicity. From a number of leading surgeons of the United States came a request to publish a periodical devoted to surgery; a committee was established to look into this subject.

When the President of the Association, Dr. William C. Gorgas, distinguished sanitarian of the Panama Canal, made his retiring address to the House of Delagates he noted that some question had been raised as to the right of the President to fill vacancies in standing committees that occurred in interims between meetings of the House of Delegates. The rapid growth of the American Medical Association had resulted in the establishment of too many committees and boards, and there was a tendency to take up new work without completing some of the projects already in hand. Dr. Gorgas was forced to take cognizance that the Association had made bitter enemies of the people engaged in the "patent" medicine business and, "as they command large capital, they are at present making a serious organized fight against us. This is the most altruistic part of our activity for the benefit of others or for the members of the Association."

THE SECRETARYSHIP

In presenting his report to the House of Delegates, Dr. George H. Simmons gave a brief account of his work as secretary of the Association. As far back as 1901 he had wanted to relinquish the position of secretary. In 1904 he suggested again that he resign the secretaryship, but the Board of Trustees advised against this. It had recommended the employment of an assistant to the secretary whose duty it would be to look after the details of that work. The position was filled by Dr. Frederick R. Green, who accepted it and who assumed in 1905 the duties of assistant to the general secretary. Dr. Simmons stated also that he had finally decided that he would not care further to be the secretary of the Association and he now definitely requested the election of a new secretary. He said:

> I realize that it is not usual to refuse a thing, especially an elective office, before it is offered. I think it better, however, to make the announcement now, so that there may be ample time for you to consider carefully whom you shall select for the position.

"For eleven consecutive years," he continued, "I have been unanimously elected general secretary, twice at the general meeting, before the reorganization, and nine times by the House of Delegates." The reference committee recommended to the House of Delegates that the desire of Dr. Simmons be respected, but it paid testimony to his work in a few well chosen words:

> Dr. Simmons needs no assurance as to the temper and position of this body concerning him personally and officially. It always has stood, and stands today, a solid wall behind him and has no words to express fully its high appreciation of his efficient and faithful service.

The committee recommended that his wish be granted

> in order that his great ability may be exclusively devoted to the duties of editor of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION—the best medical journal in existence.

When the Board of Trustees made its report, the statement was read by Dr. M. L. Harris, chairman, who presented a vast amount of material in an exceedingly concise and direct form. He listed the special projects which concerned the organization and he indicated that all the work had been reflected from time to time in THE JOURNAL. Especially, however, did he commend the work of the Council on Pharmacy and Chemistry.

THE PUBLIC HEALTH EDUCATION COMMITTEE OF WOMEN

The Board of Trustees had been greatly concerned over the appointment under somewhat doubtful auspices of a special committee known as the Public Health Education Committee of Women. Apparently a resolution had been adopted by the House of Delegates on

June 10, 1909, offered by Dr. Charles A. L: Reed, requesting the women physicians of the American Medical Association to take the initiative individually in their respective associations, in the organization of educational committees to act through women's clubs, mothers' associations and other similar bodies for the dissemination of accurate information touching these subjects among the people. They were requested to submit to the House of Delegates a yearly report of such work and elect from among their numbers a committee to take charge of it. The Board of Trustees asked the lawyers for the Association to find out whether or not such a resolution would warrant the women physicians of the American Medical Association in appointing such a committee without having it nominated by the President and further whether or not the Board of Trustees would be warranted in paying expenses already incurred by that committee. The attorneys said that there was no provision for any such action in the Constitution and By-Laws and that therefore such a committee had no legal standing as a committee of the Association. Then came a report from the women's committee, which was read by Drs. Rosalie Slaughter Morton and Mary Sutton Macy. These ladies submitted an extensive report indicating how hard they had been working; apparently they requested some funds as reimbursement for some of their activities. Now the chairman of the Board of Trustees called attention to the misunderstanding; he indicated that it was proposed to establish a council for public health education and that the work of this women's committee would probably come under a secretary's bureau for the purpose.

MEDICAL LEGISLATION

At this meeting of the House of Delegates the Committee on Medical Legislation, headed by C. A. L. Reed, made an extensive report on legislation before the Congress and before the individual states. The committee indicated the great importance of a department of publicity to inform the public on legislation affecting the practice of medicine. At this time Dr. C. A. L. Reed tendered his resignation with an extensive valedictory message based on his eight years of experience. A few wise observations in this little known statement merit thought in modern times:

> The time has passed when any organization, however altruistic its purposes, can throw the whole burden of its duties on a single person and expect to pay the obligation by the honor thus conferred.
>
> For any member of the national organization, not a resident of a given state, to appear before the legislature of that state either for or against a given measure, would, under ordinary circumstances, tend to prejudice the cause at issue before the legislators.
>
> It is hardly worth while to work seventeen years for a food and drugs act if its power to protect the people is destroyed by executive interpretation in the short space of seventeen months.

The Board of Public Instruction on Medical Subjects, which was eventually to be merged into the Council on Health and Public Instruction, had published two popular articles during the year—one on the venereal peril and the other on typhoid. The committee on ophthalmia neonatorum was making great progress toward the acceptance of its proposals by the individual states.

DAVIS MEMORIAL

The new committee on the Davis memorial was having just about the same amount of trouble in getting funds for that purpose as had the committee on the Rush memorial in the last quarter century. Only six states had contributed to the fund, and the total on hand was only a little over $700.

DEFENSE OF MEDICAL RESEARCH

The Committee on Defense of Medical Research had developed some excellent papers on animal experimentation, among them contributions by E. L. Trudeau on tuberculosis, James Ewing on cancer, James R. Angell on the ethics of animal experimentation and W. W. Keen on surgery.

Again the Constitution and By-Laws were completely revised and new arrangements made for a constitution and by-laws for the individual states.

ANESTHESIA

A committee on anesthesia had been developed to conduct extensive studies in this field. It concluded that ether was the anesthetic of choice for the general practitioner and for all anesthetists not especially skilled.

A NEW BADGE

In 1910 the Association discarded its insigne which included a red cross and adopted the emblem which is still used. In developing the design the committee suggested that it convey a definite meaning both in color and in form. Scarlet and gold had been considered medical colors since ancient times; the true ancestral symbol of the healing art was the knotty rod and serpent of Aesculapius. One member of the committee wanted an eagle on the emblem, but other members were opposed to the eagle and it was omitted.

NEW SECTIONS

Petitions came for a new section on physical forces in medicine and for a new section on urology and venereal diseases.

The House of Delegates endorsed the statistical and editorial work of THE JOURNAL leading toward control of Fourth of July fatalities and casualties.

COUNCIL ON LEGISLATION

Now came the organization of the Council on Legislation, Health and Publicity, to consist of five members elected by the House of Delegates on nomination by the President.

SECTION ON GENITOURINARY DISEASES

The committee recommended the establishment of a section on genitourinary diseases; the first officers appointed for that section were Drs. W. T. Belfield, Chicago, chairman; James Pederson, New York, vice chairman, and Dr. Hugh Young, Baltimore, secretary. The reference committe did not believe, however, that the time was opportune for the establishment of a section on physical forces in medicine or for a section on hospitals. These came later.

RATING THE MEDICAL COLLEGES

The House of Delegates authorized publicity for the rating of medical colleges in the United States, and the first rating of class A, B and C colleges was published. This publication was to be of vital significance in eliminating the weaker medical schools and in raising the standards of all the medical schools in the United States.

Again there were calls for elimination of the office of coroner.

DEATH OF RICKETTS

In this year Dr. Howard Taylor Ricketts died while undertaking investigations into typhus in Mexico; the House of Delegates adopted a memorial in recognition of his death, and THE JOURNAL published important editorials on the significance of his work.

The women's committee made an extensive report on its activities. This was referred to the Reference Committee on Hygiene and Public Health.

SIMMONS REELECTED SECRETARY

When the time came for the election of secretary, a movement began to force Dr. George H. Simmons to retain the office. The movement was successful and he was unanimously elected.

NEW SPECIAL PERIODICALS

As the session ended, the Board of Trustees was encouraged by the House of Delegates to proceed with the publication of a journal of pediatrics and of surgery whenever it should think desirable. Some members feared that the publication of these special periodicals would involve losses to the Association, although there was unanimous agreement on the desirability of good scientific periodicals for the encouragement of the specialties. In discussion, Dr. George H. Simmons made it clear that the one purpose of these special periodicals was advancement of the specialties concerned. He said "I believe that we can do nothing that will help scientific medicine in this country so much as the publication of high class scientific journals that private publishers cannot publish, even though it may be done at a loss."

THE BATTLE WITH THE PROPRIETARIES

Behind the scenes were rumblings and turmoil that reflected the activities of the "patent" medicine interests which were trying to disrupt the Association. A communication had come from Dr. G. Frank Lydston insisting that the American Medical Association had no right to meet or to elect trustees or officers outside the state of Illinois. He hinted at procedures by the state's attorney unless his demand be followed. The letter from Dr. Lydston was laid on the table.

A resolution had been developed that there be further modification of the Constitution and By-Laws to make members of county and state medical societies members *ipso facto* of the American Medical Association, and the Board of Trustees was requested to draft a suitable amendment for the purpose. The final action taken with regard to the women's educational committee was to refuse to make any grants for the payment of work of that committee. It was also decided that every committee, council, officer or bureau entitled to funds submit a detailed budget before making expenditures.

1911

LOS ANGELES

The payroll of the American Medical Association as 1911 came on the scene included 23 salaried monthly officers and about 100 other employees in the clerical and mechanical departments. The average wages of printers varied from $20 to $30 a week and of the clerical employees about $15 a week.

By this time the Association was becoming a little touchy on the work of Dr. J. N. McCormack, who was receiving a salary of $6,000 a year for his organization and legislative work. Officially he was employed by the Council on Health and Public Instruction and not by the Board of Trustees. Dr. Alexander R. Craig had been employed as assistant to the secretary. A motion was passed that a periodical to be known as the American Archives of Surgery be published beginning with 1911.

ADDRESS BY DR. WELCH

When the Association convened in Los Angeles in 1911 Dr. William H. Welch made an address to the House of Delegates, contrasting the effectiveness of its actions with those of the general meeting in a previous era. Because of the great importance of actions taken by the House of Delegates he emphasized the desirability of selecting the most competent possible representatives for membership in this body.

IMPROVEMENT IN ORGANIZATION

In further development of the compact and efficient organization that he sought for the American Medical Association, Dr. George H. Simmons recommended a technic for transfer of membership when a physician changed his location. He suggested also a reorganization of the Judicial Council as a permanent body authorized to hold meetings when necessary to consider such questions as the secret division of fees, contract practice and advertising.

During the year the Association had moved into its new building.

COUNCIL ON HEALTH AND PUBLIC INSTRUCTION

The first report of the Council on Health and Public Instruction was made by its chairman, Dr. Henry B. Favill of Chicago. This distinguished body included, in addition, Drs. Walter B. Cannon, J. N. McCormack, Henry M. Bracken, W. C. Woodward and a full time employee, Dr. Frederick R. Green, as secretary. Special bureaus devoted to legislation, organization, publicity, protection of medical research and public health had been established under the Council. Under its auspices addresses had been made throughout the nation, publications had been devoted to the defense of research, legislation had been studied in the national Congress and in the states, bulletins had been issued to the press on a great variety of subjects, and pamphlets had been issued through many state boards of health and of licensure. For instance, the special committee on public health education announced that over 2,800 lectures had been given to more than 230,000 people. Subcommittees considered in addition such subjects as visual standards for pilots, the prevention of blindness due to ophthalmia neonatorum, amblyopia from methyl alcohol and trachoma. There were reports on blindness due to industrial accidents and faulty eye hygiene.

THE JUDICIAL COUNCIL

The reorganization of the Judicial Council was recommended in some amendments to the By-Laws.

Once the Judicial Council was officially established, the President appointed to its membership Dr. Frank Billings, Illinois; James E. Moore, Minnesota; A. B. Cooke, Tennessee; Alexander Lambert, New York, and Hubert Work, Colorado.

MEDICAL EDUCATION

The Council on Medical Education reported a reduction in medical colleges from 166 in 1904 to 129 in 1911. There were still, however, vast fields to conquer.

AMENDING THE PURE FOOD LAW

The Association was urging the Congress to amend the Pure Food and Drug Law so as to prevent false statements in regard to the results to be expected from the use of medicinal agents.

The House of Delegates urged the Council on Medical Education to inform the public concerning the status of medical education and the quality of medical colleges, utilizing the forces of the Council on Health and Public Instruction for that purpose.

For the first time the Council on Medical Education recommended the desirability of a five year instruction program, one year of which was to be spent as an intern. The Council urged that medical colleges be requested to adopt such an internship as rapidly as possible.

SECTION ON HOSPITALS

A proposal came for the establishment of a scientific section on hospitals.

ALBERT ABRAMS EMERGES

While the Board of Trustees was meeting in Los Angeles, it received a remarkable letter from Dr. Albert Abrams of San Francisco in regard to a review of a book printed by him on the subject of spondylotherapy. The book had been somewhat unfavorably reviewed in THE JOURNAL, and the editor had refused the advertising pages of THE JOURNAL to the book. Dr. Albert Abrams threatened to bring suit unless the Board of Trustees reversed the action of the editor. The Board of Trustees approved the action of the editor and of the chairman of the board, Dr. M. L. Harris, in refusing space to Dr. Abrams. The subsequent career of Dr. Albert Abrams in the field of electronic medicine, an unusual form of quackery, indicated the wisdom of this early action in recognizing that he was about to depart from honest medicine into the field of fraud and charlatanism.

THE PHARMACOPEIA

Through its representatives to the U. S. Pharmacopeial Convention the Board of Trustees was initiating action to remove from the U. S. Pharmacopeia preparations of doubtful value. To this meeting of the Board of Trustees came a request from the Council on Pharmacy and Chemistry for funds to be devoted to research in therapy; the Board of Trustees gave its full support to this proposal.

ARCHIVES OF SURGERY

A special committee had met in New York to consider the publication of the ARCHIVES OF SURGERY and was proceeding with its plans, but it felt that a far more elaborate publication was needed than was then contemplated.

THE N. S. DAVIS HALL

As a memorial to Dr. Nathan Smith Davis, the Board of Trustees during this year established the library in the Association building as the N. S. Davis Hall and directed that a bronze bust of Davis be placed therein, the expense of this bronze bust to be paid for out of the Davis fund.

DR. CRAIG MADE SECRETARY

Dr. Alexander R. Craig had become secretary of the Association, and the Board of Trustees fixed his salary.

1912

ATLANTIC CITY

The Association had grown so large and the number of its sections so numerous that it now became necessary to restrict the amount of material published. Up to this time every paper read in a section and approved by the executive committee of the section was published in THE JOURNAL. Moreover, the discussions were lengthy and often of little merit. The Board of Trustees now suggested that discussions published in THE JOURNAL be limited to 500 words and that every possible effort be made to get the executive committees of the sections to limit the length of the papers and to withhold their approval from those that did not represent high quality.

ARGUMENT OVER A SURGICAL PUBLICATION

Now came a petition from 100 of the most prominent surgeons of the country requesting the Board of Trustees to proceed with the publication of the journal of surgery. At the same time, however, came another letter signed by Dr. Lewis S. Pilcher, editor of the *Annals of Surgery,* and Dr. Franklin H. Martin, editor of *Surgery, Gynecology and Obstetrics,* earnestly protesting the establishment by the Association of such a journal. They feared the publication of such a periodical, saying it "would practically put us out of business and leave the field of independent surgical journalism of this country to be occupied solely by journals of a less high scientific character." They said further "We believe it more in keeping with the high purpose of the American Medical Association to foster and forward the honest efforts of its members in the line of medical progress rather than to cripple or destroy them by unnecessary competition."

After hearing these two communications, the Board recommended that a surgical journal be developed along lines similar to those established for the ARCHIVES OF INTERNAL MEDICINE and the AMERICAN JOURNAL OF DISEASES OF CHILDREN.

DR. JOHN B. MURPHY MAKES NEW PROPOSALS

The meeting of the House of Delegates in 1912 brought forth a long address to the House by the President, Dr. John B. Murphy, dealing wholly with the work of the organization and making some revolutionary proposals as to its conduct. These included the breaking up of the Council on Health and Public Instruction so that the functions in regard to medical legislation would go to another council. He wished also a council on organization to be concerned with membership of the Association. He recognized the quality of THE JOURNAL but thought it ought to do much more in the way of answering inquiries and giving information to the medical profession. He made a brilliant attack on fee splitting and felt that the Principles of Ethics should be much more definite in its condemnation of this dishonest practice. He urged clinics in connection with the meetings of the Association. And he desired particularly that the House of Delegates check the actions of the Board of Trustees, councils, committees and officers to make certain that they were carrying out the requests of the House. He wished to have the President, the secretary and the editor made ex officio members of the Board of Trustees without voting power, and he urged also that provision be made to give to the House of Delegates complete information as to the action taken by the Board. This action was taken by the House of Delegates and has not been subsequently changed.

NEW COMMITTEES

In the meantime a number of committees appointed through actions of the House of Delegates were studying problems of great importance to the advancement of American medical science. For instance there was a committee to represent the American Medical Association at the third National Conservation Congress. There was a committee on nomenclature and classification of diseases which was conducting systematic studies on this subject. Another committee was concerned with standards in the field of anesthesia. Of this committee Dr. Yandell Henderson was chairman, and at this session of the House of Delegates Dr. Thomas S. Cullen, Baltimore, was appointed to the Committee on Anesthesia. Another committee had been established to consider the completion of the Panama Canal.

The Board of Trustees was able to announce the first publication of its book "Nostrums and Quackery," enlightening the public on frauds and quackeries; more than 10,000 copies had been promptly exhausted.

The Judicial Council, under Dr. Frank Billings as chairman, presented an extensive list of rules for its own procedures. It recommended revisions of the Constitution and By-Laws to improve still further ethical standards of the profession. These amendments concerned particularly the patenting of drugs and instruments, the maintenance of membership being made dependent on conduct in accord with the Principles of Ethics. The Council condemned the secret division of fees and the giving of commissions and urged amendments as well regarding contract practice.

NEW SECTION ON ORTHOPEDIC SURGERY

As evidence of the growth of scientific work in the Association there came a request for the establishment of a section on orthopedic surgery and another for a section on physical therapeutics. There had come previously a request for a section on proctology. The House of Delegates established the Section on Orthopedic Surgery but rejected sections on both physical therapeutics and proctology.

THE SCIENTIFIC EXHIBIT

The Scientific Exhibit was growing in quality and in the total number of exhibits, but it was feeling itself a stepchild in the assignment of space at the annual session, and the House of Delegates moved that it be given first choice of location in the exhibition hall.

A JOURNAL OF HEALTH AGAIN PROPOSED

The meeting of the Association of 1910 had heard a recommendation from the President of the Association for the publication of a journal of health. This had finally reached the status of a special committee under Dr. William A. Evans, Illinois, to investigate the possibility of publishing a health journal. The committee urged the Board of Trustees to establish a popular priced health journal. The recommendation was referred to the Board of Trustees of the Association by the House of Delegates. The board replied to the House that, if the House wanted the publication, the board would proceed. Not until 1923 was this objective accomplished.

A JOURNAL FOR GENERAL PRACTITIONERS

In his address to the Association Dr. William H. Welch had suggested the desirability of publishing a small medical journal, because THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION was too advanced and too technical for many practitioners. There were at that time 278 medical journals published in this country, many disgraceful to the profession that supported them. The report of the special committee to consider this matter was prepared by Dr. J. N. McCormack. He believed that the best method for meeting the objective would be encouragement by the American Medical Association to the state medical journals and aid to all periodicals conducted in accordance with reasonable rules as to plain honesty in their advertising and reading pages. The committee felt also that the American Medical Association might well aid these smaller publications through providing them with abstracts of the more scientific articles that appeared in the technical publications, of which there were so many in the field of medical science. As a result of these considerations THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION undertook at that time the publication of a weekly bulletin of abstracts of important medical articles. This bulletin was sent regularly to smaller medical publications. By the use of these abstracts in the smaller medical journals the advancement of medical science was regularly extended to great numbers of physicians who would otherwise never have come in contact with medical progress.

COUNCIL ON HEALTH AND PUBLIC INSTRUCTION

Again one of the most extensive reports was that of the Council on Health and Public Instruction. This body was clearly attempting functions which, in the light of present day practices, would be grouped under the heading of public relations. It conceived its principal commission to be the development of public confidence in the purposes and work of the American Medical Association and of the medical profession. It conducted a press bureau and a speakers' bureau. It compiled a handbook for speakers. It organized and developed a bureau of literature concerned with the publication of great numbers of bulletins and pamphlets. It distributed educational matter on frauds and nostrums and it enlightened the public on medical legislation. It encouraged membership in the American Medical Association, aided the campaign against the antivivisectionists, collected state laws related to health, offered prizes for the best cartoons on public health subjects and distributed a bulletin, published occasionally, to county and state medical societies regarding the work of the American Medical Association and of this council. The number of its committees was great. They included subjects as profound as resuscitation for electric shock. It had a special committee which cooperated with the National Education Association and a committee on medical expert testimony, on railroad sanitation, on vital statistics and on similar subjects. It participated with the Council on Medical Education in a joint annual conference on medical education and legislation, and all of its subcommittees, such as those on the prevention of blindness, visual standards for pilots, public health education among women, cooperation with the National Education Association and uniform regulation of membership, made special reports. Unfortunately the evolution of the work of the American Medical Association in succeeding years resulted in the lapsing of the work of this council, so that some years later it was discontinued by the House of Delegates and its various functions distributed among such agencies as HYGEIA, the Bureau of Investigation, the Bureau of Health Education, the Bureau of Medical Legislation and the Bureau of Exhibits. The special functions having to do with education of the public regarding medical legislation by the use of a speakers' bureau and special publications in that field lapsed entirely until the creation of the Council on Medical Service and, most recently, of a Bureau of Public Relations.

By an action of the House of Delegates taken at this session, the courtesy of the floor of the House of Delegates was extended to the members of the various councils and particularly to the secretaries of these councils so that they might advise the House at any time concerning their work.

DR. J. A. WITHERSPOON MADE PRESIDENT

At the elections on the fourth day of the annual session Dr. J. A. Witherspoon of Nashville, Tennessee, was elected President unanimously.

PRESIDENT JACOBI'S ADDRESS

One of the suggestions made by President Jacobi in his annual address dealt with the desirability of reforestation of the United States as a means of preventing floods. This recommendation was referred to a reference committee of which Dr. Hubert Work of Colorado was chairman. That committee recommended that the American Medical Association urge the Congress of the United States and the individual states to take immediate steps in the direction of extensive reforestation of the country and thereby to protect the country in the future against the return of similar calamities. This recommendation was adopted. A good many years later Hubert Work became Secretary of the Interior in the cabinet of President Coolidge. But reforestation began to be taken seriously by our government many years later!

Unusual at this session was a valedictory address by Dr. Abraham Jacobi to the House of Delegates. Some of his remarks were received with great appreciation of his wit. For instance, he said:

> I want you to understand that I am not used to presiding over such a body. I have done the best I could under the circumstances and I have just followed my instincts and what I have seen in inferior places. I am not used to it, because this is a queer place. There is no second and third term where people learn to be disagreeable and make people's lives uncomfortable. So you must excuse me perhaps for not having made things more uncomfortable for you.

He urged particularly that the American Medical Association develop great strength in order to secure the establishment of a department of health in the cabinet. He concluded:

> You want to get home. What I wanted to say was this, that our main position in life should be to wake up our neighbors, particularly the general practitioners, that vast number of men all over the country, and see to it that they participate in public affairs.

During the session of the House of Delegates the Board of Trustees again considered the publication of a health journal but decided that this was much too serious a proposition to be undertaken suddenly. Dr. Simmons was requested to look into the matter. He was never especially desirous of undertaking such a publication and it was not actually begun until just previous to the end of his term as editor. The Board of Trustees referred to the Council on Health and Public Instruction the question of publishing a health journal, and that council said it was not yet ready to give any advice on the subject.

MEETING OF STATE SECRETARIES

A motion was made before the Board of Trustees to provide for an annual meeting of state secretaries at the time of the meeting of the Board of Trustees in October.

GUIDES FOR THE SCIENTIFIC EXHIBIT

The Scientific Exhibit had grown so greatly that the board approved the appointment of guides, who were paid $5 a day, to show doctors around the exhibit.

NEW BUTTONS FOR OLD ONES

A decision was finally made that the button carry the letters A. M. A. and not the entire name of the Association. Then it became necessary to trade in the old buttons for the new buttons, and that had to be settled.

The attorneys of the Association rejected the proposal that the President, secretary and editor of the Association should be members of the Board of Trustees without the right to vote as being a violation of the corporation law of Illinois.

1913

MINNEAPOLIS

The year 1913 was to witness some fundamental changes in the conduct of the work of the American Medical Association resulting in part from the loss of personnel and, secondly, from evolutionary progress. The amount of material coming to THE JOURNAL increased so greatly that the Board of Trustees recommended to the House of Delegates that no more sections be created and, second, that no more than thirty papers be read in any one section. Furthermore, a special approval slip, to be used by the executive committees of the individual sections, was developed so that the executive committee could sign its endorsements for publication. It was felt also that the changing of the secretaries year by year was inadvisable and that they ought to have more permanent office. Finally it was suggested that the secretaries of the sections be assembled at least once each year at a conference and that their expenses be paid for such a conference.

BIRTH OF THE COOPERATIVE ADVERTISING BUREAU

Out of the recommendations that came from the J. N. McCormack committee came a motion to create a bureau of advertising to aid the periodicals that wished to conduct themselves in accord with the principles of the councils of the American Medical Association. The editor and general manager, Dr. George H. Simmons, and the advertising manager, Mr. Will C. Braun, were requested to prepare an outline for such a bureau and to report to the Board of Trustees at a later date.

AN OTOLARYNGOLOGIC JOURNAL

Now came also a request for the American Medical Association to undertake the publication of a periodical in the field of otolaryngology. The disputes that arose over the publication of a surgical journal had now completely blocked progress in that direction, and it was moved that a special committee be set up to study the whole question.

At the end of the February meeting of the Board of Trustees the board authorized Dr. George H. Simmons to take a vacation of ten or twelve weeks during the year. He postponed the vacation until the period following the annual session which was held in 1913 in Minneapolis.

MORE ADVICE FROM DR. JACOBI

The President of the Association, Dr. Abraham Jacobi, had devoted his official address to the question of the prevention of infant mortality. To the House of Delegates when it opened its meeting in 1913 he spoke more definitely of the work of the organization. He felt that the sections could do a better job if they had fewer papers and if the papers could be gathered in symposiums which would draw together the opinions of leaders and, he concluded, "We write too much and debate too little." He urged that the secretaries of the sections be prominent scientific men in the profession and that their term of office be lengthened. He felt that the President of the Association did not have enough to do and that aside from sitting with the Board of Trustees he might well sit with other councils and other agencies of the Association. This suggestion met with great approval by the House of Delegates, which adopted an action to the effect that the President of the Association be asked to attend all meetings of the councils, bureaus and similar bodies in the Association. Dr. Jacobi was moved by the fact that those who attended the House of Delegates simply lost touch with the scientific work of the organization, and he felt that something might be gained if the House would meet for three days previous to the time of the annual session. As President he had received some letters complaining about the "oligarchy of Chicago and the autocracy of the House of Delegates." He said "If my angry correspondents would pray less and watch more, and would interest themselves in their county and state societies and in the election of their various delegates, they would have less reason to complain of what some of them term the oligarchy of Chicago and the autocracy of the House of Delegates." He was particularly annoyed by the fact that he had received some "epistles of rebuke and expostulation" and that he had "to put up with the wiseacres who were members of no societies and even with those who were not yet citizens of the country." And, he said finally, "If you had the benefit of an Ellis Island of your own you would have fewer undesirable citizens of the profession, fewer backbiters, fewer calumniators of persons and aims, fewer enemies of the profession and fewer conspirators."

By this time the American Medical Association had reached a membership of 34,283, but THE JOURNAL had become the primary force in securing membership in the Association.

The recommendations of the Board of Trustees relative to the management of the sections met with a fine welcome from the House of Delegates, which supported the board fully in lessening the number of papers, extending the terms of the secretaries and urging more careful consideration by the executive committees of the sections of the papers that came to them.

The board announced that it was setting up a cooperative medical advertising bureau in the Association headquarters and that it had established a conference of state secretaries. All members of the Association had received copies of the Principles of Medical Ethics, and the publications of the Association were doing very well indeed.

FEE SPLITTING

In an endeavor to determine the status of fee splitting, the Judicial Council had sent a questionnaire to prominent members of the profession throughout the nation. It found great variations throughout the country in this practice. The full report on fee splitting is an extraordinarily interesting document. After discussing every possible phase of the subject, the Judicial Council adopted a resolution to the effect that any member of the American Medical Association found guilty of fee splitting—of giving or receiving division of fees—should no longer be a member of the Association. It also recommended definite action toward the elimination of the abuse of so-called lodge practice. As a part of its report to the House of Delegates at this time the Judicial Council also suggested the desirability of change in the procedure of the House of Delegates by the election of a speaker who would be responsible for conduct of the affairs of the House of Delegates. The chairman of the Judicial Council which brought in this report was Dr. Alexander Lambert. The Judicial Council included in its membership Drs. A. B. Cooke, James E. Moore, Hubert Work, George W. Guthrie and the secretary of the American Medical Association.

The report of the Judicial Council went to the House of Delegates, which decided to consider the question of speaker by the entire house sitting as a committee of the whole. The House considered the matter of the speaker as a committee of the whole, but there is nothing said in the minutes as to what it did. The other recommendations of the Judicial Council relating to fee splitting were adopted.

The Council on Health and Public Instruction presented again an extensive report of its many activities, which had proceeded along the lines laid down in previous years, and announced a similar program for the year to come. It proposed the establishment of a legislative and medicolegal bureau at the headquarters of the American Medical Association. One of the proposals was a conference of the executive officers of public health organizations to discuss mutual cooperation and proper division of the field. The Council had worked out carefully a long list of organizations interested in public health to which an invitation for a conference was sent. That conference had been held at the American Association for Labor Legislation on April 12 and officers representing thirty-nine national organizations were present. As a result of that conference a committee of fifteen was established to consider the entire question of public health activities and the ways in which they could be improved and to report its findings with definite recommendations at a subsequent meeting of the conference.

Among the men on this committee was Dr. S. M. Gunn, whose name appeared at the meeting in 1946 as a maker of the Gunn-Platt report in an effort to coordinate philanthropic organizations related to health and to standardize in some way health activities.

Conspicuous in the activities of this council were its contacts with the government. Much of its work during the year had been devoted to a method of bringing about harmonious cooperation between the Council itself and the special committee on national legislation which had been established by the House of Delegates and the committee of 100, which was concerned with public health problems. It is interesting to observe seven points in the program of this group:

> First: Appoint a committee to see President Wilson, tomorrow, May 6, at 10:45, and communicate to him the results of our conference and request him to decide on an administration policy concerning public health legislation.
>
> Second: Recommend to President Wilson that he definitely advocate the establishment of a Department of Health.
>
> Third: That he cooperate with Representative Foster in attempting to secure a Committee on Public Health in the House of Representatives during the present special session.
>
> Fourth: That he call a White House conference on Public Health next fall somewhat similar to the Governors' Conference on Conservation called by President Roosevelt. The object of this conference is to promote the success of the President's policies and if necessary to aid in framing these policies.
>
> Fifth: That at the next regular session the President should send a special message favoring public health legislation or else emphasize it in his regular annual message.
>
> Sixth: That the President should select for the first assistant Secretary of the Treasury some one interested in public health.
>
> Seventh: That in the next regular session we should support the President in securing such public health legislation as he decides to recommend.

The extensive reports of this council deserve to be read in detail by every one who is concerned today with the whole problem of public relations for American medicine.

EDUCATION

The Council on Medical Education continued to make its routine reports of progress toward further standardization of medical education.

The American Medical Association was functioning in relationship to the American Red Cross through a liaison committee.

An attempt had been made to arrange a joint meeting between the American Medical Association and the British Medical Association, but some of the members of the committee had died and the matter was still under consideration.

Already the committee which was working on the establishment of a national department of health was having a little trouble by the fact that the U. S. Public Health Service was trying to divert that activity into an expansion of the U. S. Public Health Service. The committee remarked

> We, the undersigned, cannot see any virtue in pretending to be for a Department of Health directly and then covertly attempting to get it by an expansion of the great Public Health Service.

The committee that signed that communication included Drs. J. B. Murphy, J. N. Hurty, W. C. Woodward and W. A. Evans.

The House of Delegates had at this time to clarify the functions of the Committee on Health and Public Instruction and the national department of health. It did not agree with the committee that the Association maintain a paid lobbyist in Washington. It did not concur in the idea that the American Medical Association join with other organizations of a purely commercial nature to maintain a lobby in Washington. This report, which was extensive and which was made by a committee consisting of Drs. E. J. Goodwin, chairman, A. R. Mitchell and Thomas S. Cullen, was adopted. There was much debate, during which the House of Delegates went into executive session. The minutes of the executive session are not available, but at the end the House of Delegates adopted a report placing the responsibility in the Council on Health and Public Instruction and recommending the discharge of the special committee on national public health legislation.

Out of the work of the Reference Committee on Amendments to the Constitution and By-Laws came an action which made it mandatory that a member present only one paper at any annual session.

DR. VICTOR VAUGHAN BECOMES PRESIDENT

At this meeting Dr. Victor Vaughan of Ann Arbor, Mich., was elected President of the American Medical Association. The House of Delegates had great pleasure in hearing an address by Mr. Samuel Hopkins Adams, who spoke on medical advertisements in the public press. The House of Delegates authorized the establishment of the Cooperative Medical Advertising Bureau. It created a new Section on Gastroenterology and Proctology and selected as its officers Drs. Joseph M. Mathews, Louisville, Ky., chairman; J. A. McMillan, Detroit, and A. J. Zobel, San Francisco, secretary.

The Board of Trustees at this session voted not to support a periodical on the ear, nose and throat because the time was not opportune.

DEATH OF E. E. HYDE

After the session ended, Dr. George H. Simmons departed for a trip abroad. During his absence Dr. E. E. Hyde, assistant to the editor, died suddenly of myelogenous leukemia. Following his death, Dr. Malcolm L. Harris, chairman of the Board of Trustees, served as editor until Dr. George H. Simmons returned.

At the meeting of the Board of Trustees in November 1913 Dr. A. R. Craig, secretary of the Association, presented a report in which he called to the attention of the board the loyalty of every one connected with the Association following the death of Dr. Hyde and during the absence of Dr. George H. Simmons. In the meantime Dr. George H. Simmons had secured the services of Dr. Morris Fishbein to take the place of Dr. Hyde. Dr. Fishbein had been recommended by Dr. Ludvig Hektoen and Dr. Frank Billings and had begun his work with the American Medical Association on Aug. 27, 1913.

The Board of Trustees now again took up the question of the Cooperative Medical Advertising Bureau and reaffirmed its original action in establishing this committee and making an appropriation for its work.

In creating the Section on Gastroenterology and Proctology, a motion had been made to the effect that the two existing societies in that field would disband. Apparently, however, these societies did not disband, and the secretary of the Association did not feel that he could create the section unless the societies did disband. Dr. Dwight H. Murray of Syracuse appealed to the Board of Trustees, which felt, however, that it could not go beyond the action of the House of Delegates.

Dr. G. Frank Lydston had carried to the courts his desire to force the American Medical Association to hold its meetings and elections in Illinois, so that the trustees authorized publication of the Lydston decision in THE JOURNAL under the authority of the Board of Trustees, to be signed by the secretary and chairman of the board.

1914

ATLANTIC CITY

Because the number of papers at the annual session had been reduced, the restriction of four pages to a section paper was modified now to permit six pages.

The headquarters office was permitted to expand into the old building which it had been renting to outside parties because the needs of the Association were continually growing.

Now began a battle over the rental and use of radium, which has continued until this date.

COMPULSORY SICKNESS INSURANCE LOOMS LARGE

In 1913 the American Medical Association began to be interested in the question of sickness insurance. The Council on Health and Public Instruction conceived the desirability of sending one of its employees, Dr. I. M. Rubinow, to Europe to study what was being done there in national health legislation. The Board of Trustees did not think the time was ripe to undertake such studies. An American Academy of Medicine had been formed, and the secretary of that group wanted the cooperation of the American Medical Association in studying medical sociology. This action was referred by the Board of Trustees to the Council on Health and Public Instruction.

At the meeting in Atlantic City the President of the Association, Dr. John A. Witherspoon, announced that he would not make any address because he had just got up from the sick bed.

SECTION TROUBLE

The secretary of the Association reported his troubles over the Section on Gastroenterology and Proctology. The majority of the members of the American Proctological Association were opposed to disbanding when interviewed and indicated that they were not in sympathy with the formation of the section. The Reference Committee on Sections and Section Work, chairman Dr. Hugh Cabot, recommended therefore that there be no Section on Gastroenterology and Proctology. It recommended the division of the sections into two groups—general and special—with the understanding that a member might read one paper before each of these two groups. It recommended finally a committee of five be appointed by the President and be charged with the investigation of the whole matter of sections and section work. The committee had been asked to create a section on hydrotherapy, but it did not feel it desirable to add any more sections.

BOARD OF TRUSTEES REPORT

The Board of Trustees began its report by saying that the past year had been distinguished by no unusual events in the Association. All the activities had been prosecuted with maximum interest to the medical profession. There was trouble because Arbuthnot Lane had recommended Russian mineral oil, and the Council on Pharmacy and Chemistry had found no difference between Russian mineral oil and the liquid petrolatum of the United States. A book had been published called Useful Drugs. Quacks were moving the nation into activity, and the national organization had established vigilance committees to work toward the elimination of frauds in medicine. A special department known as the propaganda department had been established in the headquarters of the organization under the leadership of Dr. Arthur J. Cramp.

The Council on Medical Education reported ten years of excellent progress. It was about to investigate proprietary graduate medical schools and it urged reorganization of the clinical departments of medical schools. A complete arrangement had been made for full cooperation with the American Red Cross.

The Council on Health and Public Instruction again defined the scope of its activities. It recommended, however, as a new activity a survey of public health activities of the federal government to determine exactly what the federal government is doing for public health. The speakers' bureau had sent speakers throughout the nation to cover a wide variety of subjects, which were carefully tabulated. The press bulletin and the bureau of literature had been continued. There was a complete survey of national and state legislation. Somewhat in advance of its time was the report on special activities. This report follows:

> The Council conceives one of its most important functions to be the cultivation, as the official representative of the Association, of friendly relations with other professional organizations and influential bodies. The problem before the Association is exactly that which confronts the individual; namely, the necessity of convincing those whom we would influence of our sincerity and good faith. In a word, the Association and the medical profession, like the individual, must acquire and maintain a reputation for breadth of mind and charity of spirit, as well as for ability and authority in its special field. If we have the confidence and cooperation of the public and if they recognize the honesty of our purpose and sincerity of our motives as a body, almost anything which we may propose will meet public approval. If, on the other hand, the public is suspicious of our motives and skeptical as to our disinterestedness, any proposition emanating from the organized medical profession, no matter how clearly for the public good, will be misunderstood and criticized. The existence of a permanent body with a definite policy and a constant attitude of friendliness toward other organizations is therefore of the utmost importance. The Council feels that, during the short period of its existence, gratifying progress has been made in this direction and that the Association and its activities are gradually coming to be understood and appreciated by intelligent and broadminded citizens.

CANCER

The subcommittees had been effective in their work. A new subcommittee was that on cancer, headed by Dr. Thomas S. Cullen as chairman, and it had begun a series of articles for enlightenment of the public on many phases of cancer.

PATENTS

An attempt had been made to secure participation by the American Medical Association in the holding of patents on medical devices, and the Board of Trustees was requested to look into the matter in cooperation with the Judicial Council.

THE AMERICAN COLLEGE OF SURGEONS

At this time also there came before the House of Delegates information regarding the formation of the American College of Surgeons, with a resolution from the state of Illinois deprecating this organization. The resolution was laid on the table, as was another substitute resolution to the same effect.

The House of Delegates encouraged the Council on Health and Public Instruction to correlate existing national health organizations in the manner proposed and to make the necessary surveys of the health activities of the federal government.

TWO NEW IMPORTANT ACTIONS

As the year went on, the Board of Trustees took two actions of great significance. First it decided to publish a series of monographs on anesthesia for the general information of the medical profession and for the advancement of knowledge of this subject. Next it created a reserve fund containing $125,000 as a first instalment, which was to grow and grow as the years went on.

(To be continued)

Clinical Notes, Suggestions and New Instruments

RENAL OSTEODYSTROPHY

COL. JAMES S. NORMAN
LT. COL. ROBERT PERLMAN
and
CAPT. STEPHEN BASTABLE
Medical Corps, Army of the United States

Extensive bone changes may occur in some patients who show evidence of chronic uremia. The chronic uremic state may be associated with congenital anomalies of the kidneys and the urinary ducts, congenital hydronephrosis, chronic cystic diseases of the kidneys and chronic interstitial nephritis. Renal osteodystrophy or renal rickets is seen uncommonly in children and rarely in adults. Amongst many thousands of troops examined in the orthopedic clinic of a large army station hospital, 1 case of renal osteodystrophy in an adult was discovered.

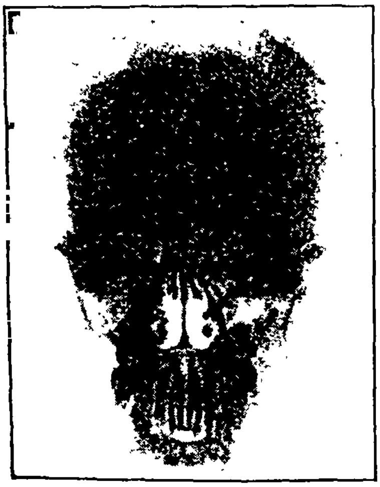


Fig. 1.—Anteroposterior view of the skull reveals fine stippling. There is a defect about 1 cm. in diameter in the lower posterior quadrant of the right parietal bone.

REPORT OF CASE

History.—V. J., a white man aged 20, was admitted to the orthopedic section of an army hospital on March 14, 1944. During a routine examination in February 1944, preparatory to overseas service, the soldier was referred to the orthopedic clinic because of the presence of unduly prominent clavicles. The patient was without subjective complaints. He revealed that at the time of his examination for induction into the army in February 1943, he was informed that his collar bones were very prominent. Roentgenographic studies in the outpatient department revealed changes in the skeleton which led to his admission to the hospital for further study.

The past history of the patient disclosed that he had had the usual childhood diseases. In response to questioning, he stated that for five years prior to this admission he had observed that he lacked energy. For this reason he shunned all athletics. Also for the past five years he noted nocturia once a night. He served as a private secretary in civilian life. He was a clerk in the army and carried on in a satisfactory manner in this capacity. He showed a high degree of intelligence. The family history was noncontributory.

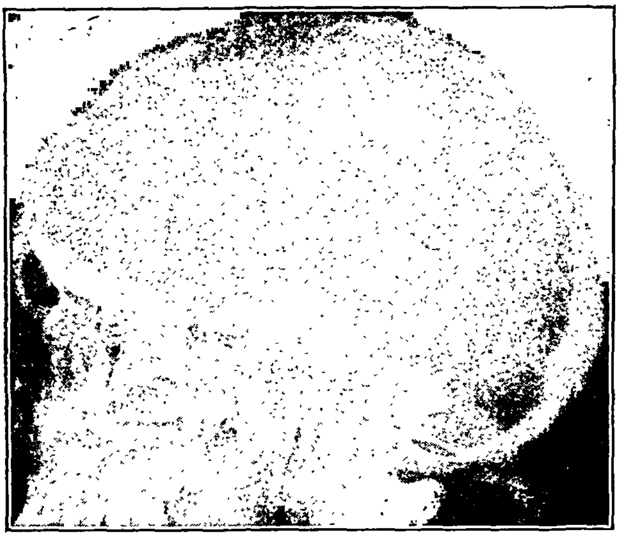


Fig. 2.—Lateral view of the skull reveals fine stippling and osteoporosis. There is a well defined calcification in the region of the choroid plexus of the left third ventricle.

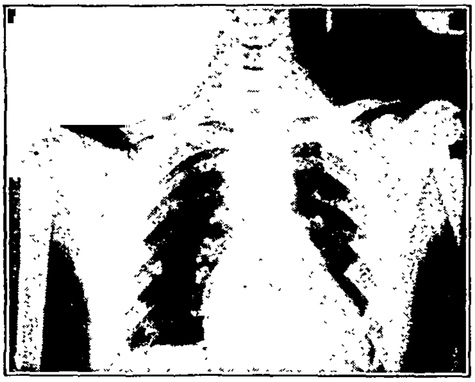


Fig. 3.—Anteroposterior view of the thoracic cage; the epiphyseal disks of the upper ends of the humeri are open. There is slipping of the humeral heads. Calcification at the acromioclavicular and sternoclavicular joints is delayed.

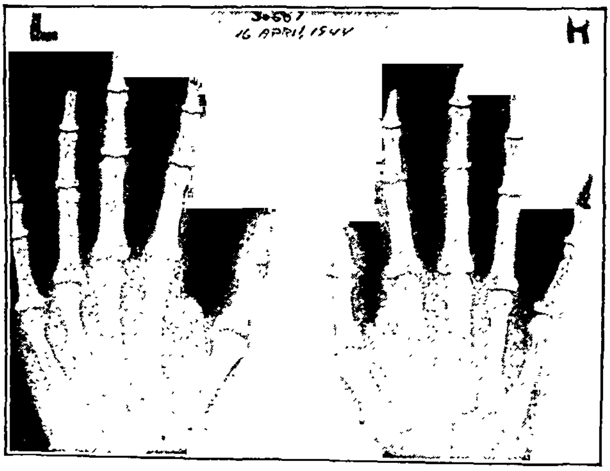


Fig. 4.—Anteroposterior views of the hands revealing calcification of the blood vessels of the thumb and fingers. There is palisade-like periosteal new bone formation in the middle phalanges.

Physical Examination.—Physical examination revealed an alert, cooperative white man. He did not appear ill. He was pale, blond and asthenic. His temperature was within normal limits. The pulse rate averaged 88 per minute and the respiratory rate 18 per minute. The blood pressure was 136 systolic and 84 diastolic. The examination of the head revealed that the skull was large and increased in its anteroposterior diameter. The eyes were prominent but definite exophthalmos and abnormal eye signs were absent. The report of the ophthalmologic consultant revealed that under dilatation each lens was observed to have a small, centrally placed "powder cataract" of the variety known as "cataracta pulverulenta centralis." This was a biconcave disk located in the fetal medeus and made up of small shiny white dots fused together to form a disk. The center of this disk was clear. There was also a clear zone between the capsule and the opacity. The opacities were bilaterally symmetric and about 3 mm. in diameter. In the periphery of each retina was a nondescript pigmentary retinal degeneration consisting of small, brownish gray pigment blotches distributed all around the posterior segment in the form of a girdle. Visual field studies were normal. The teeth failed to show abnormalities. Masses were not palpable in the neck. The sternoclavicular joints were prominent, giving the clavicles an unusually prominent appearance. The examination of the heart, lungs and abdomen failed to reveal abnormalities. Neurologic examination was not noteworthy.

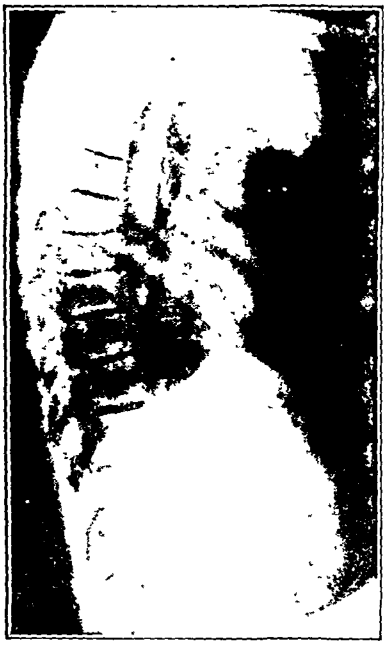
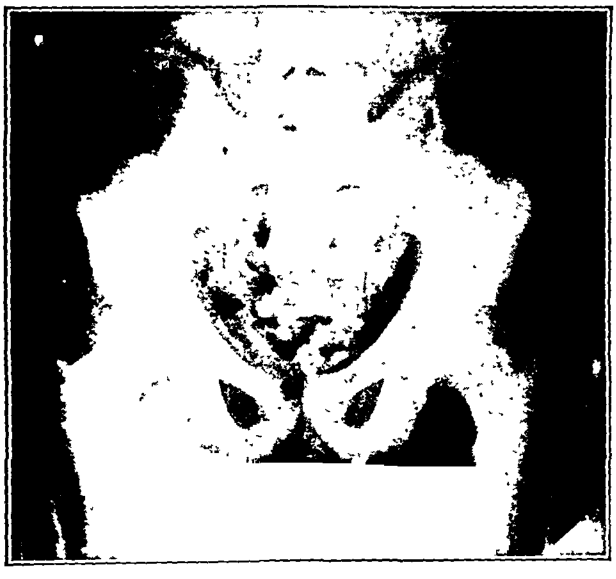


Fig. 5.—Lateral view of the dorsal spine reveals slight exaggeration of the dorsal kyphosis. There is wedging of the body of the sixth dorsal vertebra. There is narrowing of the intervertebral space and irregularity of the adjacent margins of the bodies of the sixth and seventh dorsal vertebrae. The configuration of the remaining vertebral bodies appears normal.



F. 6.—Anteroposterior view of the pelvis reveals calcification of the epiphyses of the iliac crests are open. Both uzzy and the margins are indistinct. There is erosion in the regions of the ischial tuberosities and the pubic bone near the symphysis pubis. One upper femoral epiphysis appears closed whereas the opposite one is incompletely fused. The femoral heads appear mushroomed.

Laboratory Data.—Urine: Urinalysis revealed the presence of albumin in all specimens. The highest specific gravity determination was 1.009. The phenolsulfonphthalein test showed elimination of 8 per cent of the dye in four specimens.

Blood: Examination of the blood revealed: red blood cells 4,600,000; hemoglobin 90 per cent; white blood cells 9,400 with a differential count of segmenters, 77 per cent; stabs, 16 per cent; eosinophils 2 per cent, and mononuclears 5 per cent. The Kahn test was negative. The blood level of sugar was 100 mg.; calcium 10.4 mg.; phosphorus 6.9 mg., and nonprotein nitrogen 100 mg. per hundred cubic centimeters, with 76.5 mg. on another determination. The level of urea nitrogen was 50 mg.; creatinine 2.5 mg.; cholesterol 175 mg.; total protein 7 Gm.; albumin 4 mg., and globulin 3 mg. per hundred cubic centimeters.

Spinal Fluid: On examination of the spinal fluid, manometric studies revealed normal pressure. The Wassermann test was negative. The level of sugar was 63.3 mg. and of total protein 33 mg. per hundred cubic centimeters. The lymphocyte cell count was 3.

Roentgenographic Examination.—Roentgenograms of the entire skeleton, thorax and abdomen and retrograde studies of the urinary tract were made during the period from Feb. 28, 1944 to April 16, 1944. Comparison of serial films failed to reveal essential changes in the lesions indicative of progression or regression of the process.

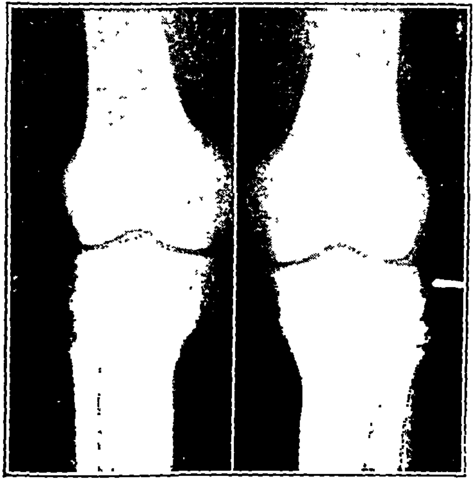


Fig. 7.—Anteroposterior views of the knees reveal erosion of the upper tibial metaphyses on the medial aspect.

Reproductions of roentgenograms of various parts of the skeleton are seen in figures 1 through 9. The study revealed mild decalcification particularly in the skull and the tibias. Diploe was not seen in the calvarium. An approximately circular defect 1.0 cm. in diameter was seen in the lower posterior quadrant of the right parietal bone. Similar smaller defects were observed elsewhere in the skeleton. Osseous erosion was seen in the metaphyseal area of the upper inner aspects of both tibias and in the region of the ischial tuberosities. Most of the epiphyseal cartilages were closed. The epiphyseal cartilages of the upper ends of the humeri were open and there was slipping of the upper humeral epiphyses. The epiphyseal cartilages of the iliac crests were open. One of the upper femoral epiphyseal cartilages was not completely fused. The femoral heads had a slightly mushroomed appearance. The acromioclavicular and sternoclavicular joints appeared widened and a considerable part of these adjacent bones were not calcified. This change was also observed in the region of the symphysis pubis. The sacroiliac joints were hazy and indistinct. Calcification was seen in the vessels of the hands, feet and pelvis. Palisade-like periosteal new bone formation was apparent in the middle phalanges of the fingers. Retrograde renal studies revealed a very small right kidney pelvis, the lower and middle calices of which retained their cupping, but the upper calyx was not clearly outlined. The left kidney pelvis was larger and presented good cupping of its calices. The lower third of the left ureter was slightly dilated. The right kidney shadow was 7.5 cm. in its long axis and the left was 10.5 cm. in the same axis. Evidence of renal calculus was absent. The liver and spleen were not enlarged. The psoas shadows were symmetric.

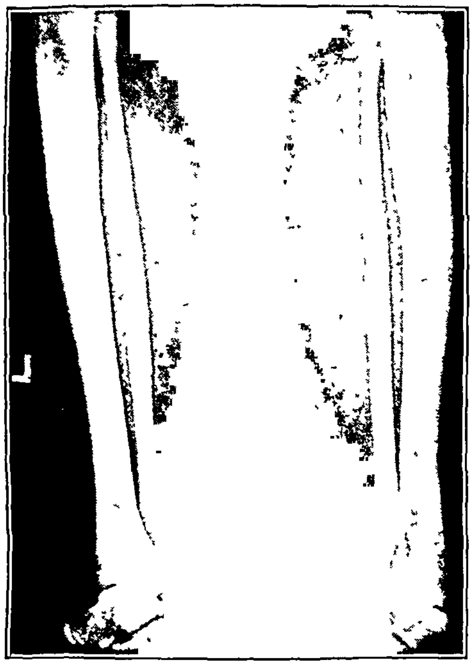


Fig. 8.—Lateral views of the legs reveal evidence of mild decalcification. There are localized areas of rarefaction of the bone.

COMMENT

On completion of these studies and establishment of a diagnosis this soldier was discharged from the Armed Forces. The roentgenographic and laboratory studies established the diagnosis of renal osteodystrophy. This term is used in preference to renal rickets or renal hyperparathyroidism because of the widespread skeletal manifestations of the pathologic process and because the case was not followed beyond the stage recorded. Most cases have been in young adults and children who show congenital dilatation of the ureters and renal pelvis or congenital hypoplasia of the kidneys complicated by a chronic nephritis as in this case, or it may be due to chronic glomerulonephritis and calculous pyelonephritis after puberty. These patients may manifest polydipsia, polyuria, dry skin, headache, anorexia or delayed sexual development. Their stature may be small. Pronounced renal failure occurs associated with an increase of nonprotein nitrogen, acidosis and hyperphosphatemia. Parathyroid hyperplasia may develop in these cases. The changes shown on the roentgenograms have been demonstrated in previously recorded cases. Calcium deposits in the neighborhood of joints have been recorded by others but were not seen in this case. The palisade-like periosteal new bone formation seen in the phalanges of the hand is an unusual feature.

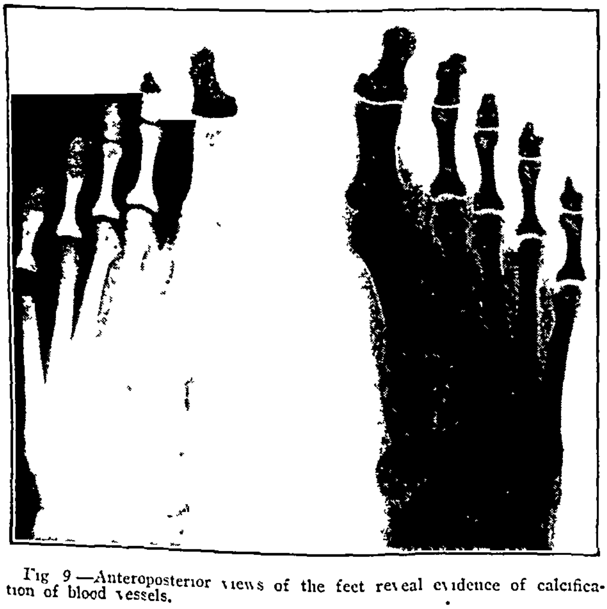


Fig. 9.—Anteroposterior views of the feet reveal evidence of calcification of blood vessels.

The skeletal changes are considered to result from impaired absorption of calcium from the intestine. Phosphates, eliminated from the intestines in large quantities, combine with calcium to form insoluble calcium phosphate, resulting in considerable loss of calcium and decalcification.

SUMMARY

Attention was directed to a case of renal osteodystrophy in an adult by the presence of unduly prominent clavicles. The patient showed evidence of a chronic uremic state with azotemia and hyperphosphatemia. The roentgenographic changes demonstrated were mild osteoporosis, stippling of the skull, delayed ossification at the epiphyseal cartilages in some areas, slipped humeral epiphyses, metaphyseal erosion, palisade-like periosteal new bone formation and calcification of the media of arteries.

Council on Physical Medicine

The Council on Physical Medicine has authorized publication of the following report. HOWARD A. CARTER, *Secretary.*

CONTRA DIAPHRAGM ACCEPTABLE

Manufacturer: Contra Creme & Diaphragm Company, Severna Park, Md.

This product is a vaginal diaphragm which may be prescribed by a physician for patients when he believes contraceptive measures are indicated. It is designed for use with a spermicidal cream that has been accepted by the Council on Pharmacy and Chemistry and was described in New and Nonofficial Remedies, 1946, page 360. The Council on Physical Medicine stated its requirements for acceptability of contraceptive devices in THE JOURNAL, Dec. 21, 1946, page 991, and the product hereinafter described is accepted as meeting those requirements.

The Contra Diaphragm consists of a domelike lamina of rubber bounded by a torus shaped rim. The rim contains a ring of spirally wound, cadmium plated piano wire; the ends are joined without soldering, and the ring is rolled into the rubber. The substance of the diaphragm and rim is made of 60 per cent solids—liquid latex rubber dipped five times. The thickness of the rim is 4.5 mm., and its flexibility is such that 460 Gm. of weight compresses it to 60 per cent of its original diameter. The overall diameter, expressed in millimeters, is used to specify the size, and ten sizes are supplied, progressing by 5 mm. steps from 50 mm. to 95 mm. The diaphragm is packaged with a 65 Gm tube of Contra Creme in a plain box with slip label only.

Evidence of harmlessness and efficacy has been furnished by competent medical investigators specializing in gynecology and obstetrics. Data have been submitted showing a satisfactory shelf life and use life. The company has agreed to stamp date of manufacture and date of warrant expiration on each package.

The directions warn against the use of oils, state that Contra Creme is to be used with the diaphragm, give adequate instructions about cleaning, advise inspection for holes and tears, and recommend fitting by a physician. The advertising matter is acceptable.

The Council on Physical Medicine, on recommendation of the Consultants on Contraceptive Devices, voted to include the Contra Diaphragm in the list of acceptable devices.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, MARCH 15, 1947

HOXSEY—CANCER CHARLATAN

Of all the ghouls who feed on the bodies of the dying, the cancer quacks are most vicious and most heartless. This statement was made in The Journal of the American Medical Association and in *Hygeia* some years ago as a comment on Norman Baker, notorious cancer quack of Muscatine, Iowa, who subsequently was convicted and confined to the penitentiary; shortly after his release, he died. Among those who were associated with Baker was Harry M. Hoxsey. He now appears on the medical scene again, this time in Dallas, Texas, endeavoring to promote a treatment of cancer by methods distinctly those of the charlatan.

The effrontery and brazenness of the cancer charlatan can hardly be equaled by any other exploiter of the weakness and credulity of mankind. Apparently, Harry Hoxsey was able to obtain a visit to his cancer clinic in Dallas by U. S. Senator Elmer Thomas of Oklahoma; he is now circulating throughout the nation a transcript of the proceedings of that visit. He has been able to get a commission appointed in Oklahoma consisting of state legislators and senators, who it is said will visit his clinic and pass on his technics. The action of the joint legislative committee of Oklahoma is unparalleled in recent history, although some Ohio legislators almost a century ago tried to pass on a cure for asthma. According to newspaper reports the Oklahoma legislative committee consists of five senators and five house members who will make the junket accompanied by Dr. Grady Mathews, health commissioner. Dr. Louis H. Ritzhaupt of Guthrie, Okla., who is a Fellow of the American Medical Association and a surgeon, according to the newspapers, told the state legislature that he thought the medical profession of Oklahoma "was open to any suggestion" and said he was sure that "scientific minds would be willing to go into the treatment" and offered no objection to the committee making the trip.

Here is the record of Harry Hoxsey. It has an aroma that smells to high heaven. It has been published on several occasions in The Journal of the American Medical Association. It is amazing that any physician anywhere would lend himself to any recognition of Hoxsey.

The father of Harry M. Hoxsey, one John C. Hoxsey, a quack now dead, used to dub himself "doctor." Hoxsey senior dabbled in veterinary medicine, faith healing and cancer curing. Around 1910 he was indicted with two others by the Montgomery County (Ill.) grand jury on the charge of attempting to blackmail a dentist of Litchfield. Following the indictment, Hoxsey senior disappeared but the two conspirators were convicted and punished. Hoxsey senior avoided arrest for some months; then he was jailed until he furnished the $5,000 bail required. He died in 1919, and the cause of his death ironically was cancer.

Following the death of Hoxsey senior, nothing further was heard of his alleged cancer cure until 1924. Then Harry M. Hoxsey, the son, formed a common law trust with the title "National Cancer Research Institute and Clinic." The declaration of trust stated that Harry Hoxsey was the "owner and possessor of a secret formula for the compounding of a treatment for cancer" and that this treatment was "something entirely new in medicine." Bear in mind that this was 1924; more than twenty-two years have elapsed since Harry Hoxsey launched it on the public. Certainly if it possessed any merit whatever in the treatment or cure of cancer that fact would long since have been established.

By 1925 Hoxsey's associates had eliminated him from the National Cancer Research Institute and they had joined with another cancer quack, one Lester Tilton of Clinton, Iowa, in a new piece of fakery known as the "United Cancer Institute." That one died in 1926. Hoxsey then showed up at Taylorville, Ill., where he got the whole chamber of commerce in Taylorville interested in establishing a cancer cure sanatorium.

The Hoxsey cancer cure at that time, as proved by the Laboratory of the American Medical Association was essentially the escharotic treatment of cancer with arsenic as the base. After The Journal of the American Medical Association published information about Harry M. Hoxsey and the Hoxide Institute, suit was entered against the American Medical Association and its editor for a quarter of a million dollars. The suit dragged on and on until the Association itself insisted that it be brought to trial in December 1928. The court then entered an order dismissing the suit.

In the meantime the Taylorville institution had closed its doors and the newspapers reported that eight brothers and sisters of Harry Hoxsey were suing him for $500,000 in an attempt to recover a share of the estate left by their father; apparently the only asset in that estate was the alleged formula for a cancer cure.

Next we hear of Hoxsey as being associated with Norman Baker of Muscatine, Iowa, who sued the American Medical Association for a quarter of a million dollars for calling him a quack. This case was heard in the Federal Court at Davenport, Iowa, in 1932;

the jury unanimously decided that the American Medical Association was quite justified in what it had written about Norman Baker. In that case, which was tried in 1931, Harry Hoxsey himself was called to the stand. Hoxsey testified at that time that he was 30 years old and that his education had not even extended through the eighth grade. He then worked as a coal miner. In 1921 he went into the cancer cure business at Taylorville, Ill. He testified that he went to Muscatine, Iowa, with Norman Baker in March 1930 and stayed at the Baker Institute until Sept. 4, 1930 on a percentage contract basis. He admitted that he treated many patients and even used the hypodermic needle and gave some injections. On cross examination it was brought out that Hoxsey and Baker had had a disagreement because Baker was using some other treatments besides the Hoxsey treatment. It was brought out on the stand that a Dr. Statler once cut a woman's breast under the direction of Hoxsey and that in another case Hoxsey himself cut the breast and the patient died five days later. It was also brought out that another patient went to the Baker Institute where Hoxsey started to treat him. When the young man left the Baker Institute he went to the State University of Iowa Dermatologic Clinic, where they found he was not suffering from cancer but from "barber's itch."

Later Hoxsey promoted his cancer cure in Atlantic City, Philadelphia and other places. For a time he headed an alleged cancer clinic in Detroit, where he hired a renegade physician to help him evade the medical practice act of that state. When he came in conflict with the authorities, he left that state. In 1932 he was heard from in Wheeling, W. Va., in connection with a Hoxie Cancer Clinic. Soon after opening this clinic he was arrested and held under bond. Next he moved to Atlantic City, N. J., where he interested some laymen in financing his cure. Still later he was tied up with the Spann Hospital in Dallas, Texas, and after that with the Bryan and Peak Cancer Clinic. In 1941 Hoxsey was fined $25,000 and court costs and sentenced to five months in jail for practicing medicine without a license. That sentence, however, was reversed by another court.

In October 1945 Hoxsey appeared at the National Cancer Institute with three congressmen to find out whether or not the National Cancer Institute would investigate his cure. A letter from the National Cancer Institute reads:

> Mr. Hoxsey seems to have a persecution complex and stated that he had been treated very unfairly by the American Medical Association many years ago. He says you thought his remedy to be something worth while and would have taken it up if he assigned over to you personally the entire rights.

This statement is of course an outright falsehood typical of the misrepresentation, chicanery and deceit that characterize the actions of charlatans.

Apparently Harry Hoxsey in his performances in Dallas, Texas, is being aided by osteopaths, who are licensed to practice medicine in that state. Apparently he has been successful in hoodwinking and deceiving eminent jurists and other important persons to the extent that they have given him tacit if not actual support. Apparently his performances and his success have caused him to believe that it is now possible for him to exploit widely his method of treating cancer and that he can "get away with it."

Because of the nature of cancer, it is among the most dreaded of all diseases. People with cancer are willing to try any kind of treatment that is offered by almost any agency. The quacks claim to cure many persons of cancer and in some instances bring support from people who believe that they have been cured, when the diagnosis has never been made by scientific methods.

Harry Hoxsey has had more than twenty years in which to prove such virtues as might have existed in his method. Such proof has never been forthcoming. The American Medical Association has from time to time published the records of more than forty cancer charlatans who have offered their methods to the American people since 1900. These methods have included injections of innocuous mixtures of water and inert salts, caustic pastes and even more bizarre quackeries. Not one of these has ever been able to prove that it produced benefit, and certainly not one has ever resulted in curing cases of cancer. How long will the complacent authorities of such states as Texas continue to tolerate Harry M. Hoxsey?

EFFICIENCY IN MILK PRODUCTION

In times of national emergency attention is commonly focused on the adequacy of the food supply; the use of available grain and other plant sources of food for animal feed customarily is brought into question at such times. From the point of view of nutrition, meat and other animal products such as dairy products and eggs are attractive because of the flavor, concentration of nutrients and high biologic value. These nutritional advantages are obtained, however, at considerable cost in the course of transformation of nutrients from farm animal feed to the ultimate human food product. Thus it has been calculated that farm animals consume almost four times the food energy that is eaten by people and two and one-half times the grain that would suffice to support the food needs of the human population.[1] When animal feed supplies are scarce, nutritionists must determine the animal food product that represents the most efficient use of the animal as a converter of energy.

In a recent review of this topic, Maynard [2] has compared pork, milk, eggs, poultry, beef and lamb as representative animal food products, using several criteria as a basis for deciding which of these foods represents the best use of animal feeds. On the basis of percentage of gross feed energy recovered in the food, pork and then milk lead the list; when the number of feed units of concentrates needed to produce 2,600 calories (roughly a daily human requirement) is computed, milk is followed by lamb and pork in the order of efficiency. When the comparison is based both on the edible food protein per thousand calories of animal feed and on the percentage of feed protein appearing in the food, milk, pork and poultry stand out. A consideration of the minerals and vitamins produced for each thousand calories of feed in the six representative animal food products again emphasizes the relative superiority of milk on the basis of content of calcium, vitamin A, riboflavin and protein. The various comparisons made by the Cornell investigator support the claim of the dairy farmer for priority when animal feed supplies are limited.

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[1] Forbes, E. B.: Indust. & Engin. Chem. **18**: 1263, 1926.
[2] Maynard, L. A.: J. Nutrition **32**: 345 (Oct.) 1946.

The doctor was probably the first to recognize the unique dietary advantages of milk; progress in nutrition has confirmed this point of view and provided experimental evidence for it. The foregoing observations on the efficiency of transformation of feed energy in the production of milk raises this food product to a new importance in the national program of nutrition.

ALLERGY IN THE PRODUCTION OF LESIONS IN DISEASE

In a recent discussion[1] of the allergic pulmonary reactions of Loeffler's syndrome it was recognized that this syndrome may occur under many allergic conditions. In a paper on the morphologic similarities of the lesions, presumably allergic in nature, of rheumatic fever, periarteritis nodosa and "other allergic syndromes" Bergstrand[2] adopts the explanation that the lesions in the joints, the heart, the blood vessels, the skin and other structures of rheumatic fever are caused by allergic reactions in which the antigen is derived from hemolytic streptococci. The vascular lesions may be much like those in periarteritis nodosa, and more or less transient lung infiltrations with eosinophilia occur in rheumatic fever.

As for periarteritis nodosa, there is direct experimental evidence of its allergic nature. Bergstrand describes 4 cases of asthma with typical transient pulmonary infiltrations, abdominal pain, diarrhea and nasal polyps, but the asthmatic features were the most conspicuous. Besides the usual asthmatic lesions, vascular changes occurred in the lungs and other structures like those characteristic of periarteritis nodosa and rheumatic polyarthritis. Foci of fibrinoid degeneration in connective tissue and granulomatous areas like those seen in rheumatic fever were present also. In the lungs were interstitial inflammatory changes, serous exudate, eosinophils and giant cells, also chronic proliferation and changes resembling those of rheumatic pneumonia. The importance of allergy in the genesis of lesions in disease appears to be perhaps greater than generally understood. The evidence at hand certainly indicates that in rheumatic fever, in periarteritis nodosa and in fleeting lung infiltrations the lesions result from allergic reactions.

The question whether eosinophilic granuloma of bone is allergic is now under discussion.[3] Of course the clinical manifestations depend on the place or places where the reaction is most pronounced as well as on the nature of the etiologic agent, that is the allergen. Whether an etiologic grouping of the allergic pulmonary syndromes can be made on the basis of the symptoms and the lesions is a question. It may well be that such allergies due to different factors may cause different lesions and a different clinical course.

Current Comment

GLUCOSE VS. ANOXIA

Consciousness may be prolonged in anoxia due to high altitude flying by the previous ingestion of glucose. Riesen and his associates[1] of the Yerkes Laboratories of Primate Biology, Yale University, made studies on volunteers who were given a supplementary feeding consisting of 80 Gm. of dextrose dissolved in 350 cc. of water with or without the addition of 1 Gm. of vitamin C (ascorbic acid), two hours after a meal. Control feedings were made with 0.2 Gm. of saccharin substituted for the dextrose and with citric acid substituted for ascorbic acid. After an interval varying from thirty to eighty minutes, each volunteer was subjected to an anoxia test in an altitude chamber. The tests were based on handwriting criteria from a dictation ditty. Thus was determined the duration of "useful consciousness" at the reduced oxygen tension. In a typical experiment 39 control volunteers lost "useful consciousness" on an average at the end of 187.5 seconds in an anoxia test at 27,000 feet in the altitude chamber. In contrast, 38 volunteers previously fed glucose retained effective consciousness on an average for 261 seconds. This was a 40 per cent prolongation of "useful consciousness" as the result of preflight glucose feeding. Tests showed that the protection afforded flying personnel by the glucose solution is greater thirty to fifty minutes after its administration than after an interval of sixty to eighty minutes. Vitamin C, either alone or in conjunction with glucose, was without demonstrable effect on the prolongation of consciousness. These results confirm experimental evidence previously reported by

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[1] The Allergic Pulmonary Reactions of Loeffler's Syndrome, Current Comment, J. A. M. A. **133**: 325 (Feb. 1) 1947.

[2] Bergstrand, H.: Morphological Equivalents in Polyarthritis Rheumatica, Periarteritis Nodosa, Transient Eosinophilic Infiltration of the Lung and Other Allergic Syndromes, J. Path. & Bact. **58**: 399 (July) 1946.

[3] Schajowicz, F., and Polak, M.: Study of So-Called "Eosinophilic Granuloma" and Its Relations to Xanthomatosis of Bone, Arch. de histol. normal y patol. **3**: 47 (June) 1946.

[1] Riesen, A. M.; Tahmisian, T. N., and Mackenzie, C. G.: Proc. Soc. Exper. Biol. & Med. **63**: 250 (Nov.) 1946.

King,[2] Green,[3] Eckman[4] and others, who found that high carbohydrate diets increase aviation performance significantly, as determined by visual, psychomotor and mental performance. They suggested that high carbohydrate meals increase aviation performance because of the higher carbon dioxide yield together with a minimum metabolic need for oxygen (anaerobic tissue respiration).

GASTROENTERITIS ABOARD SHIP

Recently Meyers[1] reported a study of major outbreaks of "gastroenteritis" on ships sailing in the Pacific Ocean during 1945. The major episodes investigated were of three different types of approximately equal numbers: those caused by Shigella, by Salmonella and by unknown causes, probably a virus. Meyers believes that food intoxication due to staphylococci was fairly common, but because of the mild and short duration of this type of gastroenteritis few outbreaks were investigated. The majority of outbreaks of gastroenteritis aboard ship are preventable by proper supervision. The most common points overlooked include failure of routine inspection of hands of food handlers and prompt removal of all food handlers from duty who show any signs of illness; the use of contaminated sea water in the vegetable peelers and on the decks of the galley, butcher shop, vegetable preparation room and the improper technic of handling cooked fowl; holding food at galley temperatures too long, and absence of soap from latrines and inadequate cleansing of hands of those involved in preparing and serving foods. If a virus is suspected as an etiologic agent, measures to control respiratory illness should also be instituted, including isolation of all patients, if possible, checking the bunking arrangements and bunking space and avoidance of transfer of men ashore or to other ships unless absolutely essential. Apparently some types of "gastroenteritis" have been particularly serious among infants traveling by ship.

THE CONSTITUTIONAL FACTOR IN THE COMMON COLD

Data on upper respiratory infections occurring among 721 boys at the Phillips Exeter Academy during each of the academic years from 1935-36 through 1938-39 have been analyzed in a study of the stability of resistance. A total of 4,888 colds was reported. The boys were divided into six groups on the basis of years in residence at the school. Analysis of the data included the mean number of colds for each of the six groups, correlation coefficients grouped according to successive years and by one or two year intervals and analysis of variance. Each boy tended to have the same number of colds year after year; individual boys varied significantly from one another with respect to the number of colds experienced. Also for the period of the study individual boys tended to vary more than the variation existing between years. Sargent and his colleagues[1] consequently support the view that a constitutional or an environmental factor plays a significant part in the etiology of the common cold. Since the environment at Exeter Academy is relatively constant, they believe that the constitutional factor is the more probable element involved. The nature of the constitutional factor cannot be defined, but the evidence presented in this and other studies supports the recommendation of these investigators that future research on the common cold should embrace the physical and physiologic characteristics of the host.

BICARBONATE AND RENAL REGULATION OF ACID-BASE BALANCE

The important role played by the kidney in the regulation of acid-base balance has been repeatedly discussed.[1] This effect is manifest for example by the reabsorption of base, the excretion of acid phosphate and other acidic anions, the synthesis of ammonia and the formation of citric acid. The role of the kidney in regulating acid-base balance by another means, the reabsorption of bicarbonate, has recently been studied carefully by a group of workers at Cornell University.[2] These investigators followed the quantitative relationship between plasma bicarbonate concentration and the rates of tubular reabsorption and urinary excretion of bicarbonate. The results indicate that there is a rather definite "renal threshold" for bicarbonate of approximately 25 millimols per liter of plasma. Below this value practically all the bicarbonate in the glomerular filtrate is reabsorbed, whereas above the renal threshold value bicarbonate is excreted, the rate being the linear function of the plasma concentration. Furthermore, it was found that the reabsorption of bicarbonate per unit of time varies directly and proportionally with changes in the rate of glomerular filtration. Thus the renal bicarbonate threshold is relatively stable and nearly independent of the glomerular filtration rate. The quantitative efficiency of renal reabsorption was illustrated by a calculation showing that under ordinary conditions in which there is a need for base conservation in man 99.95 per cent reabsorption of bicarbonate may occur. In contrast, in case of base excess, bicarbonate excretion may be almost equally complete, as has been observed on certain therapeutic and experimental regimens in which more than 100 Gm. of sodium bicarbonate has been ingested and excreted per day. The renal reabsorption and excretion of bicarbonate therefore constitutes a primary mechanism whereby the body may defend itself against either loss or expansion of its alkali reserve and thus maintain its acid-base balance.

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[2] King, C. G.; Bickerman, H. A.; Bouvet, Winifred; Harrer, C. J.; Oyler, J. R., and Seitz, C. P.: J. Aviation Med. **16:** 69 (April) 1945.

[3] Green, D. M.; Butts, J. S., and Mulholland, H. F.: J. Aviation Med. **16:** 311 (Oct.) 1945.

[4] Eckman, Morris; Barach, Beatrice; Fox, C. A.; Rumsey, C. C., Jr., and Barach, A. L.: J. Aviation Med. **16:** 328 (Oct.) 1945.

[1] Meyers, William A.: Gastroenteritis Aboard Ship: Common Types Encountered, and the Prevention and Control of Outbreaks, Pub. Health Rep. **61:** 1853 (Dec. 20) 1946.

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[1] Urinary Acid, editorial, J. A. M. A. **130:** 638 (March 9) 1946.

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ORGANIZATION SECTION

NATIONAL CONFERENCE ON RURAL HEALTH

Second Annual Meeting, held in the Palmer House, Feb. 7 and 8, 1947

Dr. F. S. Crockett, Lafayette, Ind., Presiding

Friday, February 7

The conference was called to order at 9:45 a. m. by the Chairman, Dr. F. S. Crockett, Chairman, Committee on Rural Medical Service, American Medical Association.

Chairman Crockett: We doctors and farmers are trying to improve not only rural medical service but also rural health. Rural health embraces everything that will promote better living conditions, better living standards and better medical service. We doctors can give good medical service wherever the conditions make it possible.

We may here reach decisions based on our experience and wisdom and embodying the fundamental principles that govern the solution of each problem. To make our labors really fruitful, the farm groups represented here must inititate in each county where they have a chapter the activity that will obtain, through community action, the results desired. But it is at this community level where many times it is most difficult to create an active interest in health measures that will carry through to actual accomplishment.

There are farm areas in many states where the people do not earn enough to pay for good health measures. These areas have a problem different from others only in the economic phase. Some form of outside help is needed, but, whatever is done, the principle of self help should be emphasized.

Address of Welcome

Dr. George F. Lull, Secretary and General Manager, American Medical Association, Chicago: I want to tell you how much I appreciate your coming to Chicago to attend this conference. We feel that this material you are about to cover and which you have covered in the past is of vital interest to doctors all over the country, be they located in rural or in urban areas.

The Farmer and the Medical Service Program

Mr. Albert S. Goss, Master, the National Grange, Washington, D. C.: First let us look at the farmers' ability to pay doctors' bills under normal conditions. During the ten year period 1921-1930 the farmers' net income, as compared with nonfarm income, was $200 per capita as compared to $800 per capita for nonfarm people. During 1931-1940 it was $150 to $580. During 1945, which can hardly be considered a normal year, it was $740 to $1,260. You may raise the objection that the farmer has had free house rent and free food, but that is not true, for those items have been calculated and added to his cash income to obtain the income as I have given it. Thus we can see that the ability of the average farmer to pay for adequate medical service is substantially lower than that of nonfarmers.

On the average, farmers live a substantial distance from cities or towns where medical and hospital service is available. They cannot help that. The vocation of raising the food the nation needs requires some of us—lots of us—to live way off from "Main Street." Before the war in our thousand most rural counties there was only 1 medical doctor for every 1,700 people. In our big cities there was 1 doctor for every 650 people. In most rural communities there are less than 2 hospital beds per thousand people. In fact, 1,200 of our rural counties have no recognized hospital within their borders, and these counties have a total population of 15 million people. Hospital workers tell us that we should have 3.5 or 4 hospital beds per thousand rural people.

Let us look at the accident rate among farmers and those employed in industry. The accident death rate per hundred thousand workers on farms during 1945 was 53, as compared with 19 in manufacturing industries. When it comes to less serious accidents, but those still requiring medical care, farm experience will show that most farm workers have one or more such accidents every year. Even the farm children are exposed to innumerable hazards. In considering farm accidents we must not forget that the farmer who suffers an accident is usually far from a doctor or a hospital, while most industrial plants have medical service and hospitalization facilities on the premises.

For generations we have believed that our strongest and healthiest boys come from the farm. Figures released by the military service during the late war have awakened us with a rude shock. We found that the farm boy was not nearly so fit physically as the city boy. It was found in 1943 when 18 and 19 year olds were being drafted that, for the country as a whole, 25 out of every hundred were rejected, whereas for farm boys alone 41.1 boys per hundred were rejected. In addition, infant and maternal mortality rates are 25 to 30 per cent higher in rural than in urban communities.

We appreciate the need for maintaining high standards in the medical profession, but the fact remains that over a vast section of America the cost of medical service has increased enormously and the availability of service has become poorer and poorer. Whether rightly or wrongly, we believe it is a simple statement of fact that the feeling has become more and more general that the medical associations, instead of devoting their chief efforts to the improvement of medical standards, have been more interested in eliminating competition in the medical field. Certain it is that medical service is not only much more costly but much more difficult to secure, and rural America is rapidly getting up in arms over the inadequate service.

More and more people are turning to cooperative medicine. It has many advantages, not the least of which is adequacy. It is preventive in character. It is more economical and does not require that farmers be classified as paupers in order to secure adequate service at prices they can afford. It combines the advantages of the specialization of group practice with the efficient use of personnel and facilities. However, in many sections we have faced a storm of resistance on the part of the medical profession against every effort to organize cooperatively to improve conditions, although happily this seems to be diminishing.

I do not want to leave the impression that the physicians are solely responsible for an unsatisfactory situation. The health service, the schools and the farm organizations all have their responsibilities. The point I have tried to emphasize is that we have been trying to meet the situation by the cooperative medicine route but have not had much help; in fact, have met a good deal of resistance.

With the inadequacies of the service and the resistance against change, it is not surprising that more and more farmers are turning toward government help and state control of medicine, including compulsory insurance.

My organization does not believe in state control of medicine; we believe there should be a better way.

Summing up, there is a real problem which must be met if we are to avoid statism in medicine.

Methods of Bringing and Holding Doctors in Rural Areas

Dr. Fred A. Humphrey, Chairman, Colorado Committee on Rural Medical Service, Fort Collins; Member of the National Committee on Rural Medical Service: Before rural health can be intelligently discussed, some mutual understanding of what constitutes a rural community must be accepted. A rural community may vary in size from one with a radius of a few miles to one with a radius of 50 or more miles. Its population may vary from a few hundred to a few thousand persons.

It is generally conceded that there is no distressing problem of medical care and no difficulty in getting and keeping medical personnel in the more populous rural areas, so our attention and efforts can therefore be concentrated on the larger more sparsely settled areas, where neighbors are far apart, and towns which are large enough to support a doctor are widely separated. It is in such communities that it will be difficult to convince the younger doctor to locate and establish a practice. Some better system of professional, educational, religious, social and economic relationship will have to be established in order to hold doctors in such rural communities, once they have located there.

The two groups, working as a team, can furnish the necessary leadership to put into operation that part of the program which would apply to their individual area. No rules of procedure can be made which will not have to be revised to fit some unusual condition, since there are so many diverse types of rural areas in the United States. A specific program drawn to the measurement of conditions found in the corn belt of the Middle West would of necessity need some revision to meet the entirely different type of person and occupation present in the cotton belt of the South or the mining areas of either the Eastern or the Rocky Mountain states. However, a start must be made and a general plan outlined which is flexible enough to allow the changes needed to meet the different conditions found in the various sections of the United States.

In drawing up such a plan, the first things to consider are the changes which should be made by the individual farmers and business men in the small towns which will increase their chance of having a doctor locate in their community. The suggestions made are not unreasonable or difficult of accomplishment. More time, money and energy should be spent on such things as good roads, especially from farm to market, improved sanitary conditions, safer water supply and storage and similar local projects than in trying to get a hospital located in their community under the provisions of the Hill-Burton act. Such a hospital should rightfully be located only after a scientific and practical interpretation of a thorough survey of hospital and health needs. The many "ghost towns" scattered in the mining areas of the Mountain states do not present a pleasant picture, but an even more depressing sight would be "ghost hospitals" appearing over the United States in the next few years because of poor judgment now in choosing their locations. If a town and its surrounding trade territory is large enough to support a doctor adequately and wishes to have one, then every effort should be put forth by its citizens to obtain that desire. The initiative is squarely in the lap of the local people, and to secure the goal they may have to offer even further inducement such as the physical facilities which are so essential to a doctor if he is to care properly for the sick. In some cases it may be necessary to take still another step and subsidize the doctor on a monthly basis in order to make his income commensurate with his education and ability. Such subsidies should be financed locally, if at all possible, before application for state or federal aid is made. By all means, after a doctor has located in a rural community its citizens should show their loyalty to him by using him in case of illness and not go to the larger, but more distant, towns for their medical care.

Universal participation in prepayment insurance by farm people will be of definite assistance in bringing and keeping doctors in rural areas and should be incorporated in any plan devised for that purpose.

The medical schools of the United States should be asked to cooperate and join in the attempt to solve the rural health problem. There is no other instrument in organized medicine which can or should lend itself to such a service as easily and efficiently, but a definite program must be submitted to them which will enhance rather than jeopardize the prime purpose to which they owe their existence.

Other medical schools should follow the example of the Colorado university which has established a residency in general practice following the usual rotating internship of one year. In this residency the graduate will study six months each in medicine, in pediatrics, in obstetrics and gynecology and in surgery, with allied specialties included under the four main heads. After this training it is expected that the doctor will be capable of caring for better than 90 per cent of the patients coming to him should he locate in one of the small towns. Possibly other schools have instituted the same program. If not, they should be advised to do so.

Another change in policy which would relieve materially the present shortage of doctors in rural areas is the requirement of from three to five years in general practice before resident training is begun. Such a plan would be of great benefit to the individual by broadening his clinical knowledge and by giving him a better understanding of the difficulties encountered in general practice and a finer appreciation of the economic features involved. A doctor after such an experience would be more mature and better qualified to choose the specialty for which he has the greatest aptitude and in which he has developed the most interest. Later, should he wish to become certified, some credit should be given for the time spent in general practice. It would also be beneficial, at least in the immediate future, by opening many residencies which could be and would be filled by qualified men who have served in the armed forces and who are now attempting to obtain residencies in order to become certified by special boards. These men have seen the advantage in the last war, at least as far as rank is concerned, of being certified and have obtained their desire for special training partially from that observation. In many instances recent graduates of medicine and doctors returning to civilian life want only to be a specialist and have no particular aptitude or desire to practice a particular type of specialized medicine, as evidenced by their acceptance of training in some other field if the one of their first choice is not available.

The final suggestion to the medical schools originates from the statement "You can take the boy out of the country but you cannot take the country out of the boy." In the present condition of many applicants to medical schools to one admission a certain definite proportion of them should come from the rural areas. A boy who has been born and reared in or near a small town is much more likely to return to it than a boy who has experienced nothing but city life.

As methods of "Bringing and Holding Doctors in Rural Areas," suggestions have been offered both to the rural communities and to the medical profession. The recommendations to be carried out by the rural communities are:

That they build and maintain good roads from farm to market.

That they educate themselves on public health matters and put into practice known disease preventing measures.

That they improve their living conditions.

That they have in their area persons trained in first aid and home nursing.

That in some instances they furnish for the doctor the needed facilities, such as equipment and office headquarters; in some localities even a subsidy may be necessary.

That they apply to the proper agency of their state for assistance under the provisions of the Hill-Burton act if financial aid is required to carry on their program.

That they participate in prepayment insurance.

That they patronize their local doctor and whenever possible conserve his time by going to his office.

The recommendations to the medical profession are:

That they require three to five years' general practice before resident training is begun.

That certification boards give credit for such time spent in general practice.

That hospitals establish residencies in general practice.

That students from rural areas be encouraged to study medicine.

That hospital staffs be open to men in general practice.

That the system of medical care to soldiers be adapted to rural medical care.

That the rural practitioner be kept informed on advances in medical science by contact with other medical men at county medical society meetings and short refresher courses held in the rural districts.

Methods of Bringing and Holding Doctors in Rural Areas

MR. CHESTER G. STARR, Director of Rural Health, Missouri Farm Bureau: I recognize very keenly that the problems and conditions vary from state to state. The problems affecting California may be very different from those encountered in

Missouri, and those in our own state will undoubtedly be varied from those found in Minnesota. There are some problems more or less in common, such as trends in medical education, trends in nurses' training, federal aid in building hospitals and medical centers, farm income and like matters. However, often in many states, and I have found this to be true in my own state, the peculiar state problems may offer an opportunity for united action that may be secured before long range national issues can be solved.

The day when every Missouri hamlet had at least one doctor taking care of the farm families of the community has gone with the horse and buggy and will never return. We shall have to think and plan on large community units. At the low point in Missouri, when the armed forces were draining the better practitioners into their services, it was estimated that apart from our metropolitan centers there were not more than 800 doctors of medicine in rural Missouri. From that low point, according to information given me by the Missouri Medical Association, there are now in the same rural areas a total of 1,110 doctors of medicine, or a gain of 39 per cent over the low point. We are further encouraged to know that of about 150 doctors locating in Missouri this past year—over and above those returning to their former locality from the armed forces—98 of the 150 have located in some rural area. In a recent tabulation I found that twenty-six of our rural counties had at least 1 doctor of medicine for each 1,500 people, which I am told is a reasonably good ratio.

We also have some 600 osteopathic physicians in rural Missouri, and in many counties these persons have built a feeling of confidence and reliance on their sevices. There are ten of our rural counties that have at least 1 osteopathic physician to each 1,500 people. When we add both schools together, we come up with some interesting figures of having seventy of our rural counties, or 64 per cent, with 1 physician to each 1,500 people. In the tabulation, I found in one county that there appears to be 1 physician to each 430 people. Naturally, competition in that area is rather "hot."

The greatest problem in Missouri (and it is one requiring our attention) is the increasing age of the practicing doctors of medicine. Quoting again from the data kindly given me by the Missouri Medical Association, in 1946, 43.7 per cent of all rural doctors were above 60 years of age. Eight of our counties do not possess a doctor who is under 60; in eight more 75 to 99 per cent are over 60; in twenty-nine more from 50 to 74 per cent are over 60. Definitely, Missouri needs more young doctors to locate in rural areas, both to take the place of the older retiring or dying members of the profession and also to give us a total larger than that reported for this past year.

Not to be overlooked is the fact that doctors are human beings, some more human than others. They are not to be shunted here and there on the dictates of some power—at least not in these United States. Favorable conditions must be offered for any doctor to locate in any given rural area. As I view the situation, there are certain definite favorable factors which either must be secured as rapidly as possible or must already be existing in any area. I do not wish to take unnecessary time to go into details, but I would mention (1) a rather high level of income for the community, (2) a system of good roads, (3) good living conditions such as modern homes, good offices, good schools and good community life, (4) confidence in and use of local doctors by residents of the area, (5) hospital facilities in or nearby for diagnostic and treatment purposes, (6) modern health centers doing a good job of health education and (7) good enrolment in hospital and medical prepayment plans. If most of these advantages are present in any given community, a doctor hunting a location will be human enough to be attracted to it. If they do not exist there is little hope of having a voluntary location. The only remaining solution would be a system of either county, state or national subsidization to remove through public funds some of the disadvantages.

At present I believe that subsidization is the last recourse and would prefer greatly to endeavor to correct adverse conditions through voluntary action by all interested groups and persons.

The Responsibilities of the People

A good level of farm income is a direct responsibility of farm organizations and their members. I think that we can say without any person denying the fact that the major farm organizations have gone a long way in securing parity income for farm people and protecting them against adverse price situations. Also it can be said that the farm organizations will continue to be a considerable factor in retaining a decent farm income.

In Missouri the Farm Bureau has taken aggressive action in reference to the farm road situation. In the last session of the legislature the Farm Bureau and other interested organizations were taking money out of the surplus funds of the state for what is called "milk route" building. They are over and above our own state highway roads. They are not going to be quite the high class roads the state highways are, but we are expecting to spend somewhere around 4 to 6 million dollars a year for the next five years building roads from farm homes to the high class roads. While it will be impossible to have an all-weather road on every mile of the entire road system of the state, we are expecting to have a rather wide flung system that will enable practically every farm family to drive to the nearest community at any time in the year, barring ice and snow drifts.

As farm income continues at a good rate, better living conditions will naturally be found in rural areas and in small towns that live on rural business. Of course, at present, building supply shortages preclude much new building; but these will soon be corrected and small towns will have building booms in proportion to those of the large cities. It is definitely the responsibility of the people of any community to produce good living conditions.

The Medical Profession

I believe that there must be much more discussion with young doctors and those still in school concerning general practice. From the medical journals, from the medical school catalogues, from general medical discussion, too much emphasis is being placed on specialization. The instructors in many medical schools are specialists, command high fees for their outside work and naturally talk about their particular specialty as being the one to follow on graduation. Many medical schools, from information I have picked up, are strongly headed toward making specialists and actually discourage any student from being a member of the general practice group. I sometimes wonder if the specialization is not being carried to the point that good medical diagnosis is being badly overlooked for lack of some sane, well grounded physician to coordinate the findings of the many specialists. I also believe that, provided the medical education is overhauled, more young graduates might find lucrative and more enjoyable practice in some rural area being a general practitioner rather than battling for years in some city to establish himself as a specialist in this or that.

I am also thinking of a system of rural internships whereby those students who have either come from rural areas and retain their liking for rural life or those from towns and cities who might possibly be bitten by the "rural bug" would have an opportunity to become closer identified with rural hospitals and rural life. I wounder if we are going too far afield in this suggestion.

Definitely, a great deal of good could be done by aggressive county medical associations. Many of the shortcomings of the medical profession charged to it by many people and much of the unfortunate propaganda of recent years are due to the lack of aggressive leadership in health education by local doctors. In my work in Missouri I have often found some of the medical men in a county either lukewarm in supporting health improvement or even actively combating the movement. I don't want to be too specific, but I think I am going to use the illustration of one county in southeastern Missouri where a medium sized hospital is acutely needed. I have done considerable work in that county, and I am stymied by the active opposition of four doctors of medicine who are practicing in that county who have gone up and down the roads and have written letters saying that a hospital is not needed in that county; and the nearest available hospital is 40 miles away. I won't tell you the county. Some of our Missouri folks here know it. I do not wish to level this accusation against all county medical associations, but there is a decided lack of aggressive leadership in many areas. Possibly the American Medical Association and the state medical associations can overcome this fundamental difficulty and inculcate into many county associations a spirit of public welfare and leadership in worth while health movements. In this connection there has been in some areas a feeling that many people bypass the local doctors in many instances, going to large centers and to specialists, leaving the local doctor high and dry. In areas where there has been little attempt by the local doctors to participate in local affairs, especially in local health improvement, can we blame persons for not having confidence in their local physician?

Responsibilities for All Groups

There are some favorable factors in inducing doctors to settle and to remain in rural areas that are responsibilities of all. One of these, much in prominence today, is the matter of building or enlarging the doctor's workshop—the modern hospital. The people of any community will have little incentive to build a hospital unless the physicians and surgeons of the community are willing to practice in the hospital. No doctor or group of doctors can successfully build and operate a hospital unless the people of the community are willing to share in the expense of building and be patients when built. In the areas in Missouri where the Farm Bureau has successfully led movements for the building of modern county public general hospitals this past year the people and the doctors have worked together. In 1946 our people voted between two and a half and three million dollars for building new hospitals in rural Missouri. The same teamwork is needed in health education. In Missouri we have a new act by which people of any county may build and support public health centers. With the third horse, the State Division of Health, we are hoping to have many of our counties equipped with educational health centers.

The third part of the united responsibility is the encouragement of enrolment and use of the prepaid hospital and medical plans. Without the enthusiastic support of hospital management and the medical profession, the Blue Cross and other prepaid hospital plans would be tough sledding. Without the same vigorous support of the medical profession, a prepaid medical plan would be most difficult to make a success. Most rural people are rather closely tied to their family doctor—much more than the average city dweller. If the family doctor tells John or Mary that Blue Cross is good and that in case of illness or accident the medical service will undoubtedly pay for the costs and that he, the doctor, is a member of the Blue Cross and belongs and gives service under the medical plan, then John and Mary and many other Johns and Marys enroll in the prepayment plans.

Hospital Facilities and Health Centers for Rural Areas

Mrs. Roy C. Weagley, President of the Associated Women of the American Farm Bureau Federation of Hagerstown, Md.: Although the telephone and improved roads have made their contribution toward relieving the rural health situation, I think that with their advent rural health suffered from an exodus of rural physicians into the cities. For many years both the Associated Women and the parent organization, representing 4¼ million farm people, have been vitally concerned with the inadequacy of medical care and hospital facilities available in rural areas.

Our organization has promoted group health associations and hospital insurance as a means of securing more nearly adequate care at more equitable cost to rural people, but the progress of those plans has been impeded by the lack of facilities to service such plans, and the lack of facilities is greatly responsible for the lack of physicians and nurses in rural areas.

Opportunity for health in rural America equal to that enjoyed by people in urban areas can be obtained only through close cooperation between the various groups of our system and the medical profession.

Although metropolitan areas are in the main fairly well supplied with hospital beds for general medical care, many are planning to expand the present facilities by taking advantage of the national hospital construction act. This in some instances is unwise. In my opinion it would be far better to lighten the present hospital load than to expand facilities. I am not prejudiced to expansion as was the stout lady who deserted her political party because she was against expansion under any consideration. To relieve the existing pressure on overcrowded hospitals, health centers should be coordinated with them. Rural health centers should be established within reasonable distance from the existing hospital. Rural health centers would serve a dual purpose. They would lighten the load in the metropolitan area and they would bring medical care to many rural people. By establishing health centers in rural and needy areas, the effectiveness of the very limited number of medical and nursing personnel now rendering service in those areas could be multiplied.

With a well managed health center, the greater proportion of the approximately 20 babies born to each thousand of population in rural areas could receive adequate care. At the same time the lives of many babies during that first year could be saved. Many mothers too could be spared great suffering from complications.

Essential equipment must be provided for the practice of modern medicine, for the conduct of routine tests and for x-ray service. Without such facilities it is impossible to expect our trained physicians and nurses to consider working in the rural field. It is reasonable to believe, however, that with a better distribution of hospital facilities and health centers will also come a better distribution of physicians, nurses, dentists and medical care generally.

Experience has revealed that the quality of services can be raised by the use of consultants and the facilities of accessible hospitals. My interpretation of the purpose of the hospital construction act is to promote the building of hospitals and related facilities in proportion to the need. In other words, I would say that rural areas, where the needs are greatest, should be given first consideration; otherwise the maldistribution of medical and nursing personnel would be intensified rather than improved. Likewise, if the funds are used mainly for new construction and expansion of existing facilities in metropolitan areas, that would cause even greater disparity between rural and urban opportunities for medical and hospital care.

Construction of Hospitals

Mr. Lloyd C. Halvorson, the National Grange, Washington, D. C.: About all I have to report is what we have been doing in the National Grange. We have sent a letter out to all our state offices, sending them a summary of the hospital construction act, pointing out what responsibilities they can take on the state level to get the legislation through. We suggested that they might want to include state aid toward the construction of the hospital, possibly one third, which would leave only one third for the local community. We pointed out that they need a local hospitalization plan. In some states there will be a law to permit counties to go together and cities and counties to go together in providing the necessary money. Some of the people have written in to us, being somewhat familiar with the law and knowing there is money to spend, asking what procedure they should take. We have to report that as yet most of these states haven't progressed that far in their planning. In other words, as yet the hospital district center hasn't been set up, so we have referred them to the health department for the present. We have suggested that they get in touch with the health department and find out how far they have progressed; and also there might be some tentative plan as to what procedure a local community will have to go through to get this money. We have told our people to make sure that they have farm members. It will be important to farm people to know that they are given some recognition in the laws and procedures that will be laid out.

We have a great deal of hope in these rural health centers as a way of bringing doctors to rural communities. I think there is some fear on the part of the medical profession that these centers will not provide a high standard of medical care. I think that can be taken care of so that the really urgent cases can be referred to the bigger hospitals. When it comes to the rural community, of course, there may have to be some means to provide one third, or possibly two thirds, in operating the hospital.

Cost of Operating a Hospital

Dr. Robin C. Buerki, Dean, Graduate School of Medicine, University of Pennsylvania, Philadelphia; Member of the Federal Hospital Council: As a member of the Federal Hospital Council, at the first meeting I said I had an open mind on everything except one question and one problem; and that is within the confines of the law. I refused to go along with anything suggested that made poor medical care more easily available to the public because that essentially was dangerous practice.

The average cost of operating a hospital is one-third the original cost of the building. So that if you are planning on raising a sum of money for the hospital, be sure that that community each year, from one source or another, can find one third of that original cost to operate the hospital. If you have a quality hospital there, if it can be adequately supported, then it will attract the type of doctor you want to your community and to that hospital. I happen to be dean of the largest and the oldest graduate school of medicine in this country, and more and more I see these young men who are coming up as specialists. I think we are training too many specialists, but today you do need certain specialists represented in the hospital of your community if it is going to do the job the public has a right to expect.

The question of the general practitioner having the hospital open to him and in having greater opportunity in a rural community I have no quarrel with if the board will see that he limits the type of work he does to the field in which he is competent to work. He may be ever so capable an obstetrician and yet, if it came to removing a cataract, he might well be a plumber.

Voluntary Medical Prepayment Plans as They Apply to Rural Communities

Mr. Edward Mertz, Administrative Assistant, Department of Education, Farmers Educational and Cooperative Union of America, Denver: The base of the problem is economic and means a lack of rural income and medical purchasing power. In 1943, with farm prosperity at its highest in years, income of persons on farms was only 9 per cent of national income, while farmers made up 20.5 per cent of the national population. The last Census of Agriculture showed about two thirds of our farm families had gross income under $1,000 a year and one third of these had under $400 a year. In 1940 states with 70 per cent or more rural population had per capita incomes of only $300. Even if there were plenty of doctors, nurses, hospitals and health facilities, many farmers still could not afford to use them.

Many rural families cannot participate in voluntary prepayment plans because they have insufficient income—lack of health purchasing power, if you please. Many others will not because they don't have to! Unfortunately in many cases this group includes those who most need help both from an individual and from a community point of view.

Whether the reasons for lack of participation be economic, geographic or psychologic, the fact remains that fewer than 5 per cent of our whole population now receive general medical services on a prepayment basis. Less than 3 per cent of all farm people are covered for even Blue Cross hospitalization. There is much greater coverage in states with predominantly urban population.

Is there any question that a comprehensive health service plan which would provide physician and specialist care, hospitalization, dental services and prescribed drugs cost a farm family at least $100 per year? The next question is "How many farm families could or would invest $100 in medical insurance on a voluntary basis?" Before answering this question optimistically one should remember that in 1941 half of all farm operators had annual net cash incomes of less than $760 per family, including incomes from all nonagricultural sources. These plans do not and will not provide adequate and complete health for rural people.

This should in no way be construed to mean that the Farmers Union is opposed to the development of voluntary prepayment plans of hospitalization and medical services. On the contrary, we are currently engaged in the promotion and building of the Farmers Union Triangle Health Insurance Plan, which is essentially such a plan. At present this low cost plan provides primarily for hospitalization for specified periods. And many farm families use it. We hope soon to extend the hospitalization periods and include medical services, which will of course increase the cost. While many farmers will continue to use it, many will be unable to continue their prepayments because of the cost.

The National Farmers Union builds cooperatives. Some are built to increase the economic income of farm families. We hope this type of enterprise will help make possible a decent standard of living for every farmer, which will raise the levels of health facilities to help answer the health needs of our people. We hope that eventually increased income and cooperative organization will provide adequate health services for farm people.

We recognize that voluntary prepayment plans will not solve the problem. The record of experience clearly indicates how far we have come and probably how far we can go if we continue to disregard economic inability to pay and psychologic refusal to participate. We are not afraid of the word "compulsion" because we do not confuse freedom and responsibility.

We have long since learned that individual freedom is subordinate to the freedom and welfare of all and that public health is the total of individual health. Who now questions the "rightness" of quarantine or compulsory health education? We don't permit part of our citizens to contaminate water and milk supplies deliberately. We have rigid, compulsory laws against major crime. Do you think the Social Security Program is here to stay?

We know that voluntary plans have not and cannot do the total job for many years to come. We know the limitations of these plans. We know the health problem of farm people. We also know their ability, or rather their inability, to buy health at prevailing prices. We know our health problem will become increasingly worse unless we do more.

Therefore the National Farmers Union will continue to build our Triangle Health Service Plan and to cooperate with others in developing this type of program. We will continue to improve our economic ability to buy health services through our cooperatives. And we will continue to build cooperative hospitals and health services.

But we will also continue to use our resources to bring about a universal, compulsory, complete, public health insurance program at a cost which will permit all Americans to live in health. Farm people want more than hospitalization and medical insurance. They want everything it takes to maintain good health.

Mr. J. S. Jones, Secretary, Minnesota Farm Bureau Federation, St. Paul: To me it is one of the most healthful indications that I have seen that a group of professional people, medical men, and a group of leaders representing rural organizations will take the time from their busy days to come to a conference like this to discuss this important problem in its various phases.

The first real impetus given to the plan was the success obtained by Blue Cross hospitalization service plans. One of the resistances offered rurally to Blue Cross was "Why not medical care?" With this as a backgroud, state medical associations and laymen took notice and began to develop similar plans relative to prepaid medical care.

The lack of health facilities and health plans among the low income groups led to the development of a philosophy of governmental care among segments of our population. However, the opponents and proponents of that philosophy in the discussions that I have listened to are now living in the past, owing to changed economic conditions. In 1929 the average per capita income for the nation was $686. "Not much there for any kind of medical care." In 1945 the average per capita income was $1,150. Our big problem is trying to maintain that kind of an income. This improvement in the economic picture should be a source of gratification. With the improved economic situation and the increase in the per capita income, rural people in particular have turned to those factors which make for better living. That's why we have this tremendous interest now in better rural schools and better rural institutions.

Group prepayment plans for hospital service and medical care have been organized, stimulated and developed to a great degree by farm organizations. Farm organizations in a large manner have set the pattern for rural people. While these plans are not complete or perfect, they have shown the way to attack the problem of securing against illness and accident. In rural health we have arrived at a place where we have need of coordination of these plans.

The additional value of farm organizations is of great significance. We, the people, are a part of such enterprise; and the people know they are superior to the government purveyed, subsidized attack on the problem. I like to think, in regard to the Blue Cross movement, that we truly have done as much rurally for Blue Cross as Blue Cross has done for farm people in rural communities. When improved relationships develop and are in existence among present health facilities, hospitals, physicians and lay organizations, all existing health facilities can be fully utilized and, by working together, recognize the need, the time and the place for additional facilities which may be better observed as well as more economically offered and administered. In the organization that I happen to represent we were forced to go into a hospitalization plan a few years ago. We went the Blue Cross way. To my mind, one of the greatest benefits that comes to a member is as soon as membership in that plan is established he has somebody close to home that he can go to with his gripes. I think sometimes they get their money's worth by relieving themselves of their gripes.

While the early prepaid plans were successful, including practically all medical service plans, experience has indicated that rural people generally were not ready to pay the premiums for such protection contracts, with the result that development of prepaid rural health care plans progressed slowly. We have felt it preferable to begin operation with restricted contract and expand the services offered as we develop and proceed.

Voluntary prepaid plans may be largely set out in two groups, one known as the insurance group through the insurance way handled by insurance companies. It has its advantages and disadvantages, as I see it. One of the advantages, however, as seen from that standpoint, is this: That the more people that are out talking about it and selling it, so to say, the sooner we are coming to an appreciation on the part of all rural people of the value of that kind of program. In the insurance business, in life insurance and other types of insurance, we have a multitude of companies writing that business. Some companies dislike competition. They don't like to be in competition with one another, but to my mind the thing that has sold life insurance to America is the fact that there were a large number of companies and a large number of agents out talking and selling the insurance plan and we should not object to the competition.

On the other hand is the association plan. In the association plan we have some advantages in the low cost of acquisition, especially as applied to rural people where it's done voluntarily. I think the success of Blue Cross among rural people is attributable very largely to the fact that they go out and do it themselves.

The development of the Blue Cross has given interest to the matter of this prepaid medical care plan. Those who are participating in prepaid hospital plans now know that they are capable of taking care of the problem themselves by putting their health bill on an annual budget basis and prorating the cost on an actuary basis, and with the increase in the per capita that was mentioned earlier this morning, capable in a large way of taking care of their own health needs in a better manner than heretofore.

DR. JAMES R. MCVAY, Vice Chairman, Council on Medical Service, American Medical Association, Kansas City, Mo.: A review of voluntary medical prepayment plans reveals that in their modern concept they are strictly American. The oldest of American plans is the Northern Pacific Railroad Benefit Association, which was organized in 1882 and has operated continuously since that date. Prepayment plans have developed through industrial establishments, universities, consumer and cooperative groups, various governmental units, Blue Cross and medical societies or groups of physicians. In addition, insurance companies have offered various types of health and accident coverage to the public. The medical profession has contributed to the successful operation of all these plans.

Efforts are being made to obtain accurate figures on the number of people covered by these various voluntary prepayment plans. At present any figures must be considered as estimates, as no way has yet been devised to eliminate duplications when people have subscribed to two or more of these plans.

I am indebted to Mr. L. S. Kleinschmidt, Division of Prepayment Plans, Council on Medical Service, for the factual data given in this paper. The closest estimates obtainable today indicate that the total number of persons covered by the various types of voluntary prepayment plans are as follows:

Number of Persons Covered by Voluntary Prepayment Plans

Type of Plan	Total Coverage	Year of Information
Industrial	1,516,000	1945
University student	100,000	1943
Consumer and cooperative	504,000	1943-45
Governmental	580,000	1945-46
Blue Cross	25,000,000	1946
Medical society and physicians groups	5,000,000	
	32,700,000	
Insurance companies, hospitals, surgical, accident and health coverage	44,000,000	
Total	76,700,000	

Progress was slow in the beginning. Expansion of plans as we know them today has occurred largely during the past ten years and the major increase in enrolment in the past three years.

The prepayment plans for medical care received their first impetus as a result of the phenomenal success of the Blue Cross Hospital Service Plans. With both the hospital and the patients in need of some sort of program to ease the burden of hospitalization costs, these plans grew rapidly. Today the term "Blue Cross" is recognized by almost every one in the United States.

Using the earlier experience of prepayment hospital plans as a guide, a number of state medical societies undertook to develop medical care plans. The first statewide plan was the California Physicians' Service, organized in February 1939. Within a year Michigan Medical Service was organized. These two plans, together with the county medical society bureaus of the states of Washington and Oregon, gave the medical profession the necessary experience on which to build what has now become a nationwide movement.

The growth of medical care prepayment plans since 1939 has almost paralleled that of the hospital service plans. It took Blue Cross between five and six years to place thirty-eight plans in operation. This compares favorably with the six years it took to develop thirty-seven medical care plans. The same comparison can be made with reference to enrolment. In their first seven years medical care plans enrolled 2,845,000, while Blue Cross enrolled 2,870,000.

The development of prepayment medical care was in many ways more difficult and complicated than that of hospitalization. Hospital care is a more unified service with relatively few procedures involved, whereas medical care included an almost unlimited variety of services. The problems involved in the payment and handling of claims for medical procedures are far more difficult than those for hospitalization. Years of experimenting with various methods has resulted in definite progress toward essentially sound advancement. Hospital care plans deal with a relatively few institutions, whereas medical care plans deal with several hundred or even thousands of doctors. A medical care plan then to be practical must not rely on a relatively uniform institutional point of view but actually on a host of individual attitudes if we are to retain a high quality of medical care.

The growth of voluntary health care insurance plans since 1939 has been most remarkable. Counting the twenty-eight local plans in Washington and Oregon as two statewide plans, there are now fifty-eight medical care plans sponsored by medical societies or Blue Cross. Plans are now in operation in thirty-three states and are in the process of formation in thirteen more states and the District of Columbia. This leaves but two states, Mississippi and South Carolina, without some development reported to us. The fact that not one of the medical society prepayment plans has failed since 1939 and that the rate of growth has been rapid and steadily increasing attest to the application of common sense and to the desire of the medical profession to have prepayment medical care of a high quality available to all the people.

Methods of Expansion

With the experimental phases of medical care plans well under way, more attention can now be devoted to expansion of enrolment and expansion of benefits with special attention to reaching rural subscribers. The Council on Medical Service has established a Division of Voluntary Prepayment Medical Care Plans which acts as a clearing house of factual information, experiences and successful practices of all operating plans and, by the constant interchange of this information, enables the rapid correction of unsatisfactory practices.

The early plans in Washington and Oregon included practically all medical services, surgery, home and office care and even limitied nursing and dental care. Throughout the years this broad coverage has been continued. The plans organized in 1939 and 1940 followed this lead and also provided for reasonably complete medical care. In contrast to the experience in the Northwestern states, the experience of the latterly formed plans with full coverage was unsatisfactory. It was found that the public would not pay the premiums necessary to carry out such a broad contract. Whenever a surgical contract plus a general medical care contract was offered to the public, the ratio of enrolment was more than 100 to 1 in favor of the surgical program. As a result the plans have generally preferred to begin operations with fairly restricted coverage such as surgical care, obstetric, x-ray and anesthesia in hospitalized cases. Now most of the services necessary in cases so severe as to require hospitalization are covered.

The tendency to limit services to those performed in the hospital is a natural one. In the first place most of the costly illnesses are those that require hospitalization. Secondly, there is going to be little abuse of such services. Thirdly, the actuarial experience in hospitalized cases is sufficient to provide plans with a more certain basis for determining adequate premiums. A recent study of fifty-one medical service plans shows that thirty-four of the plans offer surgical services, obstetric and specified medical services in the hospital. This same study shows that plans are continuing to expand benefits. Twelve of the plans provide for general medical care, such as home and office calls, and five plans provide almost complete coverage. The average premium for a single subscriber is approximately $1.25 and ranges from as little as 60 cents to $4.85 a month. Family coverage ranges from $1.35 to $10 a month, with an average of about $3.

Plans are still experimenting with benefits and premium rates. As one plan succeeds in some new idea, the basis for this success is made available to other plans. The same, of course, is true of failures. In this manner vertical expansion will continue to grow as actual experiences and public demand indicate.

Reviews of experience in rural areas have indicated that with the facilities available the rate of use under prepayment is higher than in the cities. The accumulation of physical defects and of chronic illness is greater. The risk of accidents is greater. Farmers are not usually covered by workmen's compensation insurance. All injuries and illnesses automatically come within the scope of the prepayment plan.

The success of a plan offering general medical coverage depends on meeting the people's need for medical care with proper control of abuses and on the maintenance of the costs at a point consistent with adequate standards of service and at premiums salable to rural subscribers. It is the job of the medical profession to keep its members informed. So too it is the job of the enrolling groups, whether they are factory, farm or community, to prevent the abuse of the benefits of the plans by their members. Equal interest in determining both coverage and premiums on a local basis should facilitate answers as to what additional medical serivces are needed, what the subscribers will pay and what the plan charge must be to remain financially sound.

Horizontally, the expansion of the prepayment medical care program is limited only by the ability and willingness of the public to enroll as subscribers. It is true that most of the plans have tended to concentrate on urban areas where large group enrolments were possible. This was a sound method because the sooner the plan obtains an adequate risk spread the sooner it can expand its benefits and enrolment program. Large group enrolment provides this spread more easily and with less acquisition cost. However, the pattern is now changing and, having reached a reasonable enrolment and a sound financial level, ways and means of reaching all population groups—particularly the rural—are being explored. In general, the pattern has not been to deal with the farm group as a separate problem but to include it in what is called community enrolment. In community enrolment the farmer is considered a part in the area encircling a town or village. Usually the town is the center for trading. The whole community then becomes a group with premium payments payable at some central place.

A Method for Proceeding

A successful Blue Cross enrolment campaign in rural areas was carried out in Colorado by the Weld County Agricultural Health Association. Enrolment was on a community basis, reaching all elements of the community as a civic service. Weld County, the largest county in Colorado, is about three times the size of Rhode Island and has a population of 63,700. Greeley is the largest town in the county, with 15,900 population, and there are several smaller towns. Prominent businessmen, farm organization leaders and various club leaders met with the Blue Cross representatives and decided to form a health association under the Colorado law governing cooperatives. Twelve directors, each representing a definite district in Weld County, govern the health association. This division provided workable units in size and population for an enrolment and administrative program. Enrolment was not limited to Blue Cross, but each district was allowed to enroll separately in the Colorado Medical Service plan whenever 50 per cent or more of the families in the district had subscribed to the Health Association. To date Weld County has 8,000 participants enrolled. Colorado has organized ten other similar county health associations and thus far has enrolled one in every six persons in rural areas and one out of every two urban residents.

Iowa has organized fifty-five similar county health improvement associations. Other states are enrolling on a similar community basis with less formal organization.

Voluntary prepayment plans are growing rapidly in rural areas. A survey of Blue Cross rural enrolment reported in November 1946 by the Blue Cross Commission shows an increase of 200 per cent since 1944. The study shows a total of 1,637,533 subscribers and dependents now as compared with 500,000 rural members in 1944.

Many medical care plans have developed their organizations to the point where rural enrolment is being carried on or plans are being made by those reaching into rural areas. A study of these plans now under way indicates that about one half of those doing rural enrolment, twelve plans, have reported 304,542 subscribers and dependents. It is estimated that the study, when completed, will show medical care plans in a position comparable with Blue Cross of two years ago—or a half million rural members.

The problem cannot be solved at a national level. It must, to be successful, be worked out in the community where the need exists. There must be developed a community responsibility which will lend its active support if any effort is to succeed.

Continuing improvements in transportation and extension of better roads will accelerate the growing tendency of rural people to bring the patient to the physician. Thus the physician's care and the use of other health facilities can be extended over an area that includes a sufficient number of people to meet the costs of the services provided.

Use of the Insurance Principle

A study of the fees for medical services rendered by the rural practitioners shows that they are not excessive. However, there are times when illnesses strike and the severity of the cases cannot be predetermined. For this reason many farm families faced with severe illness find it difficult to meet the full costs from their income. This problem of meeting the costs is basically the same as it is with people living in towns. The only sound method so far devised is through the use of the insurance principle we have described. Prepayment medical care plans available to all people of a community, townspeople and farmers alike, tend to spread the risk and distribute the costs. Thus, having the cost known in advance, proper planning and budgeting for these otherwise unpredictable costs is possible.

Families or individuals unable to pay the full costs of medical care from their incomes and those now receiving public assistance should be called on to pay for their own medical care as far as is consistent with their incomes and provision made through locally administered public funds to pay the balance of the premium required to participate in a prepayment plan. Every effort should be made to help and not to pauperize or regiment the most individualistic element of our social economy—the American farmer.

The problem of the lower income groups can be solved by local communities and state actions in line with the rapidly developing voluntary prepayment medical care movement.

Division of Responsibility

Who carries the responsibility for the medical care program? The physicians because of their special training cannot escape the responsibility for the professional aspects of the program. Experience has shown that they do not want to. The recipients of the medical service (the people) cannot escape the responsibility of paying the costs of the services. Both should do their full share in providing the needed facilities. With full cooperation of the medical profession and the people, working in mutual confidence, a medical care program can succeed by undertaking the various types of medical service one step at a time. As experience is gained, additional types of medical care can be included. Coverage may be as complete as is desirable in any community. Progress can be as rapid as experience indicates and the economic situation permits.

For ten years or more doctors have operated experimental plans in medical care insurance. On the basis of this experience they now feel ready to recommend prepayment plans to the people. The Council on Medical Service created by the House of Delegates of the American Medical Association has as one of its primary functions the fostering and developing of prepayment plans. The American Medical Association has rural health committees devoting their attention to the rural problem as do the various state medical associations.

It Can Be Done

Local representatives of farm organizations such as those present here today, together with business groups and local medical societies working in full cooperation and mutual confidence and understanding, are now in a position as never before to work out this heretofore difficult phase of delivering medical care to all the people. And unfettered by the totalitarian ideologies of the Old World we will continue to be "America, the land of individual opportunity."

(To be continued)

Medical Legislation

MEDICAL BILLS IN CONGRESS

Department of Health, Education and Security

A bill introduced by Senator Aiken, Vermont, S. 712, proposes to constitute the Federal Security Agency a **Department of Health, Education, and Security.** The Department will be administered by a Secretary appointed by the President by and with the advice and consent of the Senate and there will be an Under Secretary and two Assistant Secretaries, also appointed by the President by and with the advice and consent of the Senate. The bill does not prescribe the qualifications to be possessed by either the Secretary, the Under Secretary or the two Assistant Secretaries.

Diseases of the Heart and Arteries

Senator Pepper, Florida, has introduced S. 720, requesting the President to mobilize at some convenient place in the United States an adequate number of the world's outstanding experts and coordinate and utilize their services "through the Surgeon General of the United States" or through an independent group appointed by him and build clinical and laboratory research facilities, in a supreme endeavor to discover means of preventing, treating and curing **diseases of the heart and arteries.** According to the bill, such diseases now kill 587,314 people a year in the United States, and cause disability to 7,840,000 more. An appropriation of $100,000,000 would be authorized to enable the President to carry out the purposes of the legislation.

Health of School Children

Senator Morse, Oregon, by S. J. Res. 66, would authorize the Secretary of Labor, acting through the Children's Bureau "of the Department of Labor," in cooperation with Federal, State and local agencies and qualified institutions of higher education to (1) make studies of the **health and physical status of children of school ages;** (2) make studies of the facilities and services offered by schools for the correction of physical defects of children of school ages; and (3) recommend the use of, and demonstrate in representative urban and rural areas, methods of conducting school health examinations and providing school health services. For the purpose of defraying the expenses of the Department of Labor in carrying out the provisions of the joint resolution and providing funds for direct grants by the Secretary of Labor to State departments of health, State departments of Education, and qualified institutions of higher learning, there will be authorized to be appropriated $100,000 for the fiscal year ending June 30, 1947 and $450,000 for each of the succeeding fiscal years.

Miscellaneous

H. R. 2045 has passed the House and Senate, amending the Federal Food, Drug and Cosmetic Act by providing for the certification of batches of drugs composed wholly or partly of any kind of **streptomycin or any derivative thereof.**

By H. R. 1811, introduced by Representative Boggs, Louisiana, it is proposed that dispensary treatment and hospitalization in Army and Navy hospitals be provided for **retired enlisted men** of the Army, Navy, Marine Corps, and Coast Guard.

S. 459 has passed the Senate in an amended form, providing that no person shall be discriminated against under **the Civil Service Act** because of any physical handicap provided his or her employment will not endanger the health or safety of fellow employees.

The establishment of a **veterans' hospital** in southeastern Alaska is proposed by H. R. 1880, introduced by Representative Hagen, Minnesota.

STATE LEGISLATION

Arizona

Bills Introduced.—S. 119 proposes the enactment of a **hospital survey and construction act** requiring a statewide survey of hospital facilities and the preparation of a program for the construction of additional needed facilities. The superintendent of public health is authorized to apply for federal aid in survey and planning activities, and the state department of health is appointed as the state agency to conduct the survey and develop the state plan. S. 120 proposes the enactment of a **hospital licensing law** and the establishment of a hospital advisory council.

Arkansas

Bills Introduced.—H. 92 and S. 301 propose that all persons applying for a **marriage license** shall present a certificate signed by a licensed physician stating that such applicant is free from venereal disease. S. 308, *to amend the medical practice act*, proposes to **eliminate the homeopathic board of examiners.**

Bills Enacted.—H. 18 has become Act No. 71 of *the Acts of 1947.* It requires every physician, at the time of the first examination, to take or cause to be taken a sample of the blood of a **pregnant woman** and to submit the same to an approved laboratory for a standard serologic test for syphilis. H. 109 has become Act. No. 85 of *the Acts of 1947;*

It is a hospital survey and construction act providing for a **survey of hospital facilities** in the state and the preparation of a program for the construction of additional needed facilities The law requires the appointment of an advisory hospital council and authorizes the state board of health to apply for and accept federal funds for assistance in state survey or construction plans

California

Bills Introduced—A 2243, to amend the law relating to nonprofit **corporations operating hospitals**, proposes that such corporations claiming tax exemption or other benefit on the ground that it is nonprofit shall admit to any hospital operated by or under the control of the corporation any person in need of its facilities whose admission is requested by any person holding a valid and unrevoked physician's and surgeon's certificate issued under the provisions of the business and professions code A. 2279, to amend the business and professions code relating to applications of **commissioned medical officers**, proposes that such applicants shall be granted a license to practice on filing an application on a form prepared by the board A 2307 proposes certain regulations prohibiting **the vivisection of animals** and withdrawing the exemption from such provisions of properly conducted scientific experiments or investigations performed under the authority of the faculty of a regularly incorporated medical college or university of the state. S 1278 proposes to authorize the board of medical examiners to examine and license persons desiring to practice **physical therapy** and defines a physical therapy technician or physiotherapy technician as a person who undertakes or represents himself as able to treat or to alleviate ailment, deformity, fatigue, human disease, injury, obesity, pain or any other physical or mental condition by the use of massage, therapeutic massage, exercise, therapeutic exercise or by the use of the physical, chemical and other properties of electricity (except x-rays, radium and electrosurgery), heat, light or water S 1469 proposes general regulations for the licensing and regulating of health insurance and service plans

Colorado

Bill Introduced.—H 895 proposes to appoint the Colorado State Department of Public Health as the sole agency for carrying out the purpose of **the federal hospital construction** act and to require the governor to appoint a state advisory hospital council

Connecticut

Bill Introduced.—S 742 proposes to authorize **injured employees** at all times to select a physician or hospital of their own choice.

Georgia

Bills Introduced — S 48 proposes to require both **applicants for a marriage license** to present a certificate signed by a regular physician licensed to practice medicine in the state of Georgia certifying that no clinical evidence of syphilis has been found and that the applicant is not infected with such disease in a stage in which it may become communicable to the marital partner H 249 proposes that the curriculum of all high schools in the state supported wholly or in part by public funds shall contain a course **in sex hygiene** to be taught in the last two high school grades

Idaho

Bills Passed—H 141 passed the senate February 26 It proposes to add **cancer** to the list of diseases which a physician must immediately report to the department of public health. H 144 passed the senate February 27. It proposes to limit the sale of **barbituric acid** or compounds to sale on prescriptions signed by a person licensed to prescribe or administer barbiturates The prescription would not be refillable unless specifically designated on the prescription S. 55 passed the senate February 27 It proposes a **hospital licensing law.** This proposal was amended in the senate on February 24 by proposing to exempt from such licensing requirements any supervision, regulation or control of the remedial care or treatment of residents or patients in any home or institution conducted for those who rely on treatment by prayer or spiritual means in accordance with the creed or tenets of any well recognized church or religious denomination, except as to sanitary and safe conditions of the premises, cleanliness of operation and its physical equipment S. 102 passed the senate February 27. It proposes the enactment of a state **hospital survey and construction** act requiring a statewide survey of hospital facilities and the preparation of a program for the construction of additional facilities The proposal would also require the appointment of an advisory hospital council and would authorize the commissioner of the state department of public health to apply for and accept federal funds to assist the state in survey and construction activities

Indiana

Bills Passed.—H 450 passed the house February 27. It proposes to provide for the licensing, inspection and regulation of **nursing homes.** S. 1 passed the house February 25. To amend the law relating to **hospital surveys,** it proposes to appoint the state board of health as the state agency to cooperate with the federal government in the construction of hospitals within the state and proposes to add to the hospital survey law a new section defining the terms "hospital," "public health center" and "nonprofit hospital"

Iowa

Bills Introduced.—H. 357 proposes the creation of a state **board of naturopathic examiners** and proposes "'Naturopathy,' which includes all forms of physiotherapy, is that system of the healing arts which means 'Nature cure or health by natural methods' and is defined as 'the prevention, diagnosis and treatment of human injuries, ailments and diseases by means of any one or more of the psychological, physical or mechanical, chemical or material, forces or agencies of nature'." S 397 proposes a law for the licensing, inspection and regulation of hospitals

Kansas

Bill Introduced—H. 308, to amend the law relating to the **licensing of osteopaths,** proposes that they shall have received at least two terms of nine months each of preprofessional training and proposes to extend the scope of osteopathic practice to include the right to use and prescribe narcotics

Maine

Bills Introduced—S 293 proposes to authorize local health officers to annually provide for the **free vaccination** of all inhabitants within his jurisdiction and to provide for free inoculation against diphtheria and whooping cough of all children under 12 years of age S. 335 proposes an enabling act for the formation of **medical service plan corporations**

Maryland

Bills Introduced.—H. J. R 8 proposes the appointment of a committee to study the need for hospital facilities exclusively for the treatment of **rheumatic fever** and to make recommendations therefor. S. 209 proposes the granting of **free scholarships** to the University of Maryland school of medicine.

Massachusetts

Bill Introduced.—H. 1361 proposes regulations governing the right **to engage in animal experimentation.** The proposal makes no exception in favor of hospitals or medical schools but they too must obtain the necessary certificate from the commissioner of public safety.

Minnesota

Bills Introduced.—H. 878 proposes a law relating to the incorporation of voluntary nonprofit **medical care corporations.** H 882 proposes to prohibit **hospital employees** of a charitable hospital from encouraging, participating in or causing any strike or work stoppage against or directly involving such charitable hospital.

Missouri

Bill Introduced.—H. 132 proposes a new law relating to the licensing, regulation and supervision of **maternity hospitals.**

Montana

Bills Passed.—H. 235 passed the house February 21. It proposes a law for the licensing and regulating of **hospitals within the state.** A house amendment of February 14 added to the proposal the requirement that no person operating a hospital shall in any manner or by any device discriminate between the patients of any regularly licensed physician for or on any ground or reason whatever, including the fact that such physician is not a member of the medical or surgical or other staff, clinic or internal instrumentality of the hospital. An amendment of February 18 in the house exempted Christian science institutions from the operation of the proposal. H 236 passed the house February 21. It proposes the enactment of a Montana **Hospital Survey and Construction Act** requiring a survey of hospital and health facilities in the state, a program of construction for additional needed facilities, the appointment of an advisory hospital council and the necessary cooperation for the receiving of federal funds to aid in the construction of such additional needed facilities as the program may require.

New Hampshire

Bill Introduced.—H 370 proposes the enactment of a **hospital survey and construction** act requiring a survey of hospital facilities within the state and the preparation of a program for the construction of additional needed facilities The proposal also requires the appointment of an advisory hospital council and authorizes the state board of health to apply for and accept federal funds for assisting the state in its hospital program

Bill Passed.—S. 19, to amend the law relating to **medical service corporations,** passed the senate February 26 It proposes to authorize the members of the board of trustees or directors of the medical service corporations in the state to be members of the Vermont Medical Society and residents of Vermont.

New Jersey

Bill Introduced—S 66 proposes to appoint the state department of institutions and agencies as the agency **to receive federal funds** to assist in a state survey of hospitals and the development of a state program for the construction of additional needed facilities.

New Mexico

Bill Passed.—S. 80, to amend the law relating to **osteopathic physicians,** passed the senate February 24 It was previously reported as proposing to eliminate therefrom the requirement that no plan for rendering medical services shall be adopted by any state, district, county, city or town which discriminates against osteopathic physicians and surgeons This proposal was amended in the senate on February 24 by proposing the insertion of the words "and no plan, program or other matter shall be approved by any state, district, county, city or town official which discriminates against osteopathic physicians and surgeons; provided, however, that this section shall not be construed to affect any plan, program or other matter concerning the operation or maintenance of any hospital or other institution or fraternal group or organization, provided, however, if the presence of any osteopathic physician on the staff of any tax supported hospital will under federal law or regulation prevent such hospital from receiving any federal funds, the governing authority of such hospital will have the power to remove all osteopathic physicians from the staff of such hospital."

North Dakota

Bills Passed.—H. 52 passed the house February 19. It proposes to amend the law relating to hospitals by setting up rules and regulations for the **licensing of maternity homes** and maternity hospitals. H. 127 passed the house February 13 and the senate February 28. It proposes regulations for the licensing of **chiropractic hospitals** by the state board of chiropractic examiners. S. 38 passed the huose February 26. It proposes to require every physician or other person authorized by law to practice obstetrics, who attends **a pregnant woman** for conditions relating to pregnancy, to take or cause to be taken a sample of blood of such woman at the time of the first professional visit and to submit such sample to an approved laboratory for a standard serological test for syphilis.

Ohio

Bills Introduced.—H. 136, to amend the medical practice act, proposes to exempt therefrom practitioners of the **Christian science church** who attempt to treat human ills through prayer alone. H. 280 proposes to limit the **sale of barbiturates** to sale by a pharmacist on prescription of a licensed practitioner or sale by the practitioner in the course of his own practice. S. 165 proposes the creation of a **board of chiropractic examiners** and defines chiropractic as "the art and science of locating, the procedure preparatory to adjusting, and the adjusting by hand of the subluxations of the articulations of the spinal column, which is deemed to be the twenty-four movable vertebrae, including the sacrum and coccyx and adjacent tissues, for the purpose of removing any interference with nerve transmission; but it shall not include surgery nor the administration or prescription of any drug included in materia medica, and it shall not be deemed to be a branch of the practice of medicine or surgery within the meaning of section 1286 of the General Code, or of section 12691 of the General Code; neither shall it be deemed to be the practice of osteopathy, obstetrics, optometry, dentistry, chiropody nor any limited branch of medicine or surgery, other than chiropractic, as designated in section 1274-1 of the General Code."

Oklahoma

Bill Introduced.—S. 122 proposes the enactment of a **mental health law.**

Bill Passed.—H. 159 passed the house February 24. It proposes to require various practitioners of the healing art to **list descriptive letters after his name** in order to designate the branch of practice in which he engages.

Oregon

Bill Introduced.—S. 356 proposes to prohibit any discrimination against a person because he has purchased **prepaid medical insurance** or similar services.

Pennsylvania

Bills Introduced.—H. 153 proposes to provide for the examination and **licensure of masseurs** and defines the occupation of masseur as "the massaging of the human body through the use of manual therapy." S. 108 proposes an appropriation to the trustees of the Pennsylvania state College for the establishment of a **state medical college.**

South Carolina

Bill Introduced.—H. 24, **to amend the marriage law,** proposes to require each applicant for a marriage license to present a certificate signed by a duly licensed physician of his state certifying that such person is of sound mind and is free from venereal disease.

South Dakota

Bills Passed.—H. 50 passed the house February 24. It proposes the enactment of a South Dakota **hospital survey and construction act.** A house amendment of February 21 would require any institution accepting federal funds for construction purposes to first agree that it will not discriminate between practitioners of the various healing arts and every duly licensed doctor of medicine, osteopathic physician and chiropractor shall have the right to and shall be entitled to practice his profession in any such hospital which has received federal funds. H. 302 passed the senate February 28. To amend the **basic science act,** it proposes to exempt therefrom any one who has served as a medical officer in World War II. S. 184 passed the senate February 27. It proposes to prohibit the **sale of barbiturates** except on the original prescription of a practitioner, which the proposal defines as a person licensed by law to prescribe and administer barbiturates.

Tennessee

Bills Enacted.—H. 232 was approved February 7. It provides for the regulation and **licensing of all hospitals** within the state. S. 153 has become chapter 16 of the Public Acts of 1947. It is a **hospital survey and construction act** providing for a statewide survey of hospital facilities and the preparation of a program for the construction of additional needed facilities. The commissioner of the state department of health is authorized to receive federal funds in behalf of applicants desiring to construct additional facilities and to transmit them to such applicants after their plans have been approved.

Vermont

Bill Introduced.—H. 164 proposes an appropriation for the continued maintenance of the Vermont **blood plasma bank.**

Washington

Bills Introduced.—H. 285, to amend the law relating to **county and other government hospitals,** proposes to authorize such hospitals to be members of and maintain membership in any local, state or national group or association organized and operated for the promotion of the public health and welfare or the advancement of the efficiency of hospital administration and in connection therewith to use tax funds for the payment of dues and fees. H. 297 proposes a survey for the discovery, treatment, hospitalization, education and training of persons afflicted with **cerebral palsy** and the appointment of a committee to make such a survey. H. 378 proposes to require **applicants for a license to practice** medicine and surgery to have graduated from a medical school accredited and approved by the Association of American Medical Colleges and the Council on Medical Education and Hospitals of the American Medical Association. H. 454 proposes **to authorize optometrists** to render expert testimony in court relative to the diagnosis of the human eye or any refractive muscular or anatomic condition thereof.

Bills Passed.—S. 158 passed the senate February 21. It proposes the creation of a **medical disciplinary board** to hear complaints for the revocation of professional licenses. S. 216 passed the senate February 26. It proposes the enactment of a **hospital licensing law.**

West Virginia

Bills Enacted.—H. 9 was approved February 25. It amends the medical practice act by exempting therefrom the practice of the **religious tenets of any church** in the ministration to the sick or suffering by mental or spiritual means, provided sanitary and public health laws are complied with and provided no practices shall be used which may be dangerous or detrimental to life or health and further that no person shall be denied the benefits of accepted medical and surgical practices H. 13 was approved February 25. To amend the **law relating to autopsies,** it provides that a coroner or justice shall not, without the consent of the prosecuting attorney, authorize an autopsy or chemical analysis on a dead body unless the justice or coroner has first obtained the consent in writing of the next of kin, and the cost shall be paid by the county court on the order of the prosecuting attorney. This provision would not be applicable, however, where the prosecuting attorney reasonably believes that an unlawful act has been committed.

Washington Letter

(From a Special Correspondent)

March 13, 1947.

Hawley Warns Medical Work Periled by Lack of Funds

Until Congress grants a deficiency appropriation, the Veterans Administration is without funds to carry on medical work, Dr. Paul R. Hawley, the agency's medical chief, told a panel discussion on veterans' hospitals conducted by the American Legion Conference on Veteran Rehabilitation. Dr. Hawley informed the 500 delegates that future activities depend on a deficiency grant to carry the administration through next June. He explained rapid demobilization of the armed forces was responsible for the medical division's funds running out. Representative Taber of New York, appropriations committee chairman, recently led the fight to have the $600,000,000 deficiency appropriations request for administration purposes cut to $180,000,000 pending further study. Colonel F. H. Dryden, Veterans Administration assistant administrator for construction, defended the agency against charges of unnecessary delay in hospital building. He said the program is going ahead as rapidly as costs and facilities will allow.

Allocation of Streptomycin to Veterans Administration Increased

The March allocations of streptomycin to the Veterans Administration was increased to 28,500 Gm. from the October 7,500. The Civilian Production Administration reports the total initial U. S. allocation for the month was 410,625 Gm. as compared with the 325,225 Gm. initially released in February. The allocation is apportioned as follows: armed service, 30,000 Gm.; other government agencies, 30,000; chemical research, 18,945; tuberculosis research, American Trudeau clinical program, 9,000; for civilian use 322,700 Gm., of which 75,000 is for export.

World Health Constitution Expected to be Ratified

Surgeon General Thomas A. Parran of the U. S. Public Health Service told an audience in the Federal Security Auditorium here that "only a handful" of nations (not including the United States and the Soviet) had already ratified the constitution for a world health organization signed by 61 of the 63 nations at last summer's conference in New York. He added that ratification by all was anticipated. Dr. Parran declared that air travel had wiped out barriers of time and space once protecting America from diseases of far-off lands. "The only effective protection we have in this country against the spread of epidemics is to help stamp out diseases wherever they occur throughout the world," he said.

Russians Reported Training 1,980,000 Technicians in Five Years

Soviet publications released here disclose that Russia's five year plan for science includes the training of 1,280,000 technicians and 700 laboratory specialists having scholastic degrees. The Soviet is making a tremendous effort to recover from wartime losses of research equipment and personnel. Research in medicine as well as atomic energy and other subjects is being covered. Special inducements offered Russian scientists are extra rations, housing, cash and honorary awards. German scientific personnel is also being extensively used.

House Members Criticize Research Phase of Armed Forces Merger

Although Congress is expected to agree to the main provision of President Truman's armed forces merger plan, House members have criticized provisions for military research and procurement divisions. They contend that research should be open to civilian scientists as well as servicemen and there should be greater standardization of Army-Navy purchasing. Representative James W. Wadsworth, Republican of New York, said he would like to see the research and procurement phases "strengthened to the point where they are geared for the highest measure of performance."

200,000 Americans Are Potentially Unemployable Each Year Through Disablement

Mrs. Walter Bloedorn, chairman of the fund advisory committee, Washington Committee for Civilian Rehabilitation, stated modern medicine and rehabilitation agencies are neglecting 200,000 Americans each year who become potentially permanently unemployed through disablement.

Doctor Makes Mercy Flights Piloting His Own Plane

Dr. William W. Welsh, of Rockville, Md, makes mercy flights in his own small airplane. His latest act of mercy was to fly with a local pilot to a remote section of Montgomery County to drop sulfonamide drugs at a farmhouse where a child was ill with pneumonia

Funds Required for Study of Aphthous Fever in Mexico

An investigation of aphthous fever, the human counterpart of foot and mouth disease, will be conducted in Mexico if funds are available, say Public Health service officials They are anxious to make the study because of the serious cattle plague and lack of knowledge of the human side of it.

Senate Gives Red Cross Chapters Greater Voice in Affairs

The Senate has passed a bill, now before the House, which gives local chapters of the American Red Cross a greater voice in local affairs and amends the law incorporating the Red Cross to increase the board of governors from 18 to 50, of whom 30 would be elected by the chapters.

United States Blocks the Shipment of Drugs to Cuba

Narcotics commissioner Harry J. Anslinger banned shipments of narcotics to Cuba after it was learned that Charles Luciano, New York racketeer deported to Italy, had taken up residence in Havana The United States is the principal supplier of drugs to Cuba, solely for medicinal use. It was feared that Luciano might cause the diversion of the narcotics to illegal uses. The ban was lifted after Cuban authorities took Luciano into custody and arranged for his return to Italy.

Doctor Ties for Third Place in Bridge Championships

Dr. A. J. Steinberg of the District of Columbia tied for third place in the Worlds Masters Individual Bridge Championships, held in New York. He played against 65 other contract experts and lacks only six cumulative points of winning the Life Masters rating, highest rank conferred by the American Contract Bridge League.

Coming Medical Meetings

Alabama, Medical Association of the State of, Birmingham, April 14-16 Dr. Douglas L. Cannon, 519 Dexter Ave., Montgomery 4, Secretary.

American Association for the Study of Goiter, Atlanta, Ga., April 3-5 Dr. Thomas C. Davison, 478 Peachtree St., N. E., Atlanta 3, Secretary.

American Association of Anatomists, Montreal, Canada, April 3-5. Dr. Normand L. Hoerr, 2109 Adelbert Road, Cleveland 6, Secretary.

American Association of Industrial Physicians and Surgeons, Buffalo, N. Y., Statler Hotel, April 26-May 4. Dr. Frederick W. Slobe, 28 E. Jackson Blvd, Chicago 4, Secretary.

American College of Physicians, Chicago, April 28-May 2. Mr. E. R Loveland, 4200 Pine St., Philadelphia 4, Secretary.

American Laryngological Association, St. Louis, April 23-24. Dr. Arthur W. Proetz, 12 Westmoreland Place, St. Louis 8, Secretary.

American Laryngological, Rhinological and Otological Society, St. Louis, April 25-26. Dr. C. Stewart Nash, 288 Alexander St., Rochester 7, N. Y., Secretary.

American Otological Society, St. Louis, April 21-22. Dr. Gordon D Hoople, 713 E. Genesee St., Syracuse 2, N. Y., Secretary.

American Society for Clinical Investigation, Atlantic City, Chalfonte Haddon Hall, May 5. Dr. Eugene A. Stead Jr., Grady Hospital, Atlanta 3, Georgia, Secretary.

American Society for Research in Psychosomatic Problems, Atlantic City, May 3-4. Dr. Edwin G. Zabriskie, 714 Madison Ave., New York 21, Secretary.

Arizona State Medical Association, Tucson, May 7-10. Dr. Frank J Milloy, 112 N. Central Ave., Phoenix, Secretary.

Arkansas Medical Society, Little Rock, April 17-19. Dr. William R. Brooksher, 602 Garrison Ave, Fort Smith, Secretary.

Association of American Physicians, Atlantic City, May 6-7. Dr. Joseph T. Wearn, Lakeside Hospital, Cleveland 6, Secretary.

California Medical Association, Los Angeles, Hotel Biltmore, April 30-May 3 Dr. L. Henry Garland, 450 Sutter St., San Francisco 8, Secretary.

Connecticut State Medical Society, New Haven, April 28-30. Dr. Creighton Barker, 258 Church St, New Haven 10, Secretary.

Dallas Southern Clinical Society, Dallas, Texas, March 17-20. Dr. Glenn D. Carlson, 1133 Medical Arts Bldg., Dallas, Secretary.

Florida Medical Association, Miami, April 20-23. Dr. Robert B. McIver, P. O. Box 1018, Jacksonville, Secretary.

Georgia, Medical Association of, Augusta, Bon Air Hotel, April 22-25. Dr. Edgar D. Shanks, 478 Peachtree St. N. E., Atlanta, Secretary.

Hawaii Territorial Medical Association, Lihue, Kauai, May 1-4. Dr. Harry L Arnold Jr., 510 S. Beretania St., Honolulu 53, Secretary.

Iowa State Medical Society, Des Moines, April 16-18. Dr. John C. Parsons, 406 Sixth Ave., Des Moines 9, Secretary.

Maryland, Medical and Chirurgical Faculty of, Baltimore, April 22-23 Dr. W. Houston Toulson, 1211 Cathedral St., Baltimore 29, Secretary.

Mid Atlantic Section, American Urological Association, Washington, D. C., Hotel Statler, March 20-22. Dr. Theodore R. Fetter, 255 S. 17th St., Philadelphia, Secretary.

Mississippi State Medical Association, Biloxi, May 6-8. Dr. T. M. Dye, Box 295, Clarksdale, Secretary.

Missouri State Medical Association, Kansas City, March 30-April 2. Mr. Thomas R. O'Brien, 634 N. Grand Blvd., St. Louis 3, Executive Secretary.

Nebraska State Medical Association, Omaha, April 28-May 1. Dr. R. B. Adams, 416 Federal Securities Bldg., Lincoln 8, Secretary.

New Jersey, Medical Society of, Atlantic City, Haddon Hall, April 22-24. Dr. Alfred Stahl, 160 Lincoln Ave., Newark 4, Secretary.

New Mexico Medical Society, Albuquerque, April 30-May 3. Dr. H. L. January, 221 West Central Ave., Albuquerque, Secretary.

New York, Medical Society of the State of, Buffalo, May 5-9. Dr. Walter P. Anderton, 292 Madison Avenue, New York 19, Secretary.

North Carolina, Medical Society of the State of, Virginia Beach, Va, Cavalier Hotel, May 12-14. Dr. Roscoe D. McMillan, P. O. Box 232, Red Springs, Secretary.

Northern Tri-State Medical Association, Detroit, April 8. Dr. John L Stifel, 232 Michigan St., Toledo 2, Ohio, Secretary.

Ohio State Medical Association, Cleveland, May 6-8. Mr. Charles S Nelson, 79 E. State St., Columbus 15, Executive Secretary.

Oklahoma State Medical Association, Tulsa, Mayo Hotel, May 14-16 Mr. R. H. Graham, 210 Plaza Court Bldg., Oklahoma City, Executive Secretary.

Southwest Allergy Forum, Shreveport, La., March 31-April 1. Dr. Sim Hulsey, 505 Medical Arts Bldg., Fort Worth, Texas, Secretary.

Tennessee State Medical Association, Memphis, April 8-10. Dr. W. M. Hardy, 706 Church St., Nashville 3, Secretary.

Texas, State Medical Association of, Dallas, Adolphus Hotel, May 5-8 Dr. Holman Taylor, 1404 W. El Paso St., Fort Worth 3, Secretary

GOVERNMENT SERVICES

ARMY

HEARINGS ON MEDICAL SERVICE CORPS BILL

Hearings began in February on H. R. 1982, a bill proposing to establish a Medical Service Corps in the Army Medical Department, consisting of the Pharmacy Section, Optometry Section, Medical Allied Science Section and such other sections as the Secretary of War may deem necessary. The Surgeon General, Major Gen. Norman T. Kirk, pointed out in connection with the first hearing on the bill that preservation of health in conservation of the strength of the military forces entails the performance of numerous duties which do not require the application of professional technical training in medicine, dentistry or veterinary medicine. These duties, such as certain phases of medical supply, personnel management, laboratory investigation, psychiatric social work, clinical psychology and sanitary engineering, can be performed adequately by scientific specialists and skilled administrative personnel.

It is proposed to establish in the Medical Department of the Regular Army a Medical Service Corps with a Reserve component which will be composed of pharmacists, sanitary engineers, optometrists, psychologists, bacteriologists, business administrators and officers of similar skill, all of whom have served with the Medical Department. Experience during World War II demonstrated the advisability of including these scientific and highly trained specialists of the Medical Department in a single corps. General Kirk indicated that on the basis of needing a thousand officers in the Medical Service Corps, 60 per cent would be in the Pharmacy Corps, 38 per cent in the Allied Sciences Corps and 2 per cent in the Optometry Corps.

MICROFILM SERVICE AVAILABLE TO PHYSICIANS

The Army Medical Library, through its photoduplication services, supplied millions of pages of microfilmed medical articles to the armed services and other research agencies during the war. The principle of immediate aid direct to the user, wherever he might be, introduced a new technic to assist medical research. This service is now generally available for civilian physicians, institutions and research workers on a cost basis. This means direct access to the library's enormous resources of medical literature.

A fee of 50 cents is charged for filming any periodical article in a single volume, regardless of length. Microfilming from monographs is furnished at 50 cents for fifty pages or fraction thereof. Photostats are also available at a charge of 50 cents for each ten pages or fraction thereof. Material filmed is not for reproduction without permission of the copyright owner.

To keep costs down, a coupon system has been established. Users may buy any quantity of photoduplication coupons at 50 cents each. Order blanks are available on request. Checks should be made payable to the Treasurer of the United States and sent to the Army Medical Library, 7th Street and Independence Avenue S.W., Washington 25, D. C.

ARMY OCCUPIES ST. LUKE'S HOSPITAL IN TOKYO

The U. S. Army 49th General Hospital now occupies the widely known St. Luke's Hospital in Tokyo, serving the medical needs of the occupational personnel in Japan. St. Luke's Hospital was an American institution open to all races and creeds and was founded in 1884 under the auspices of the Episcopal Church. One of the first hospitals to have a full time staff receiving fixed salaries, it was successful and grew in size until in 1923, when an earthquake ruined the buildings. A new permanent hospital with 225 beds was erected the next year. In 1925 two thirds of the new buildings were destroyed by fire. With contributions by both Japanese and Americans a fireproof modern building then was erected. A million dollar contract was signed in 1928 for the first two units, and the cornerstone was laid on March 5, 1930. The school of nursing was authorized by the Imperial Government as a college in 1927. Later the Rockefeller Foundation gave the school a $400,000 endowment. When the American troops occupied Japan, the 42d U. S. Army General Hospital, brought from Manila, moved into St. Luke's and later was replaced by the 49th General Hospital, which continues to occupy the buildings and to provide medical care.

GENERAL KIRK RECEIVES HONORARY DEGREE

Major Gen. Norman T. Kirk, the Surgeon General, and other military leaders were awarded the honorary degree of Doctor of Laws by Columbia University at a special ceremony in New York, February 21. Among the others receiving this degree were Secretary of State George C. Marshall, Gen. Dwight D. Eisenhower, Fleet Admirals Ernest J. King, Chester W. Nimitz and William F. Halsey, Gen. Alexander A. Vandegrift, Vice Admiral Emory S. Land (retired) and Major Gen. Lewis B. Hershey. Gen. Douglas MacArthur and Gen. Henry H. Arnold were unable to attend. The degrees were conferred by the acting president of the university, Frank D. Fackenthal, Litt.D.

This is the citation accompanying General Kirk's degree: Norman Thomas Kirk, who as Surgeon General of the United States Army led the campaign against the hazards of battle; using every resource of speed and skill and research to preserve the lives and restore the health of fighting men; a soldier warring upon disease and disaster, and gaining an unprecedented, an almost unbelievable, victory: I gladly admit you to the degree of Doctor of Laws, *honoris causa,* in this university and confer on you all the rights and privileges which attach thereto.

COST OF ARMY RATION INCREASES 32 PER CENT

A War Department study indicates that the Army is spending up to 32 per cent more today to feed a soldier than it cost a year ago. The value of the garrison ration, which was 60.07 cents in January 1946, is now 79.88 cents. The field ration in the same period increased from 60.07 to 72.88 cents. The caloric value and general structure of the master menu in 1946 was not changed appreciably over that of the previous year, and while designed to yield about 3,800 calories it actually provided an average of 3,611 calories a day, such waste as bones, grease and trimmings representing a loss of about 5 per cent. A soldier was served over the period of a year 335 pounds of meat, 506 pounds of vegetables and potatoes, 281 pounds of milk and milk products, and 190 pounds of cereals and breads, the remaining 500 pounds of food including eggs, fats, beverages, fruits, dried fruits, sugar, citrus fruits and juices and condiments. Of the meat consumed nearly one third was beef.

NAME OF MEDICAL SCHOOL CHANGED

The Surgeon General of the Army has announced establishment of the name Army Medical Department Research and Graduate School. This school, which was formerly known as the Medical Department Professional Service Schools, will continue to be a part of the Army Medical Center. The Army Medical School, which is a part of this research and training center, was established in 1893 and has long been a source of important contributions to medical advancement.

PUBLIC HEALTH SERVICE

THE NATIONAL HEALTH COUNCILS

The U. S. Congress has designated three councils to make recommendations to the Surgeon General, U. S. Public Health Service, regarding means necessary to carry out his responsibilities in Public Law 410 and Public Law 487 of the 78th and 79th Congress respectively in the use of funds for research. The councils are the National Advisory Health Council, the National Advisory Cancer Council and the National Advisory Mental Health Council. Research projects approved by these councils will receive grants in aid for which applications may be made by individuals, medical schools, hospitals and public or private institutions. The membership of the National Advisory Health Council is as follows:

Gordon M. Fair, Graduate School of Engineering, Harvard University.
Edwin B. Fred, University of Wisconsin, Madison
A. Baird Hastings, Department of Biological Chemistry, Harvard Medical School
Carl S. Marvel, University of Illinois, Urbana
Kenneth F. Maxcy, School of Hygiene and Public Health, Johns Hopkins University, Baltimore.
Karl F. Meyer, director, George Williams Hooper Foundation for Medical Research, University of California Medical Center, San Francisco
John H. Musser, professor of medicine, Tulane University School of Medicine, New Orleans
Harry S. Mustard, Columbia University School of Public Health, New York
William C. Rose, Noyes Laboratory of Chemistry, University of Illinois, Urbana
Henry F. Vaughan, dean, School of Public Health, University of Michigan, Ann Arbor

The membership of the National Advisory Cancer Council is as follows:

Robert F. Stone, University of California Medical School, San Francisco
Charles B. Huggins, Department of Surgery, University of Chicago School of Medicine
Frank E. Adair, Memorial Hospital for the Treatment of Cancer and Allied Diseases, New York
A. C. Ivy, University of Illinois College of Medicine, Chicago
Shields Warren, Harvard University Medical School, Boston
Waltman Walters, Mayo Clinic, Rochester, Minn

The membership of the National Advisory Mental Health Council was published in The Journal, February 8, page 409.

FUNDS FOR RESEARCH ON MENTAL PROBLEMS

In accordance with recommendations of the National Advisory Mental Health Council, the U. S. Public Health Service announces that three types of grants may soon be available under the National Mental Health Act. These grants would provide funds for training, for research and for community services. The Public Health Service is now authorized to make grants to institutions offering training in psychiatry, clinical psychology, psychiatric social work and psychiatric nursing. Complete information may be obtained from the Mental Hygiene Division, U. S. Public Health Service, Washington 25, D. C. The National Advisory Mental Health Council expects to take final action on these applications by the middle of April. Interested schools are urged to make their applications.

The council has authorized the U. S. Public Health Service to grant a total of not more than 600 stipends this year to graduate students of psychiatry, clinical psychology, psychiatric social work and psychiatric nursing. The annual stipends range from $1,000 through $2,400 for clinical psychologists, psychiatric social workers and psychiatric nurses and up to $3,600 for psychiatrists. These awards will be made through the institutions collaborating in this phase of the training program of the U. S. Public Health Service. Applicants are requested not to write to training centers of the Public Health Service about these stipends until they are announced in May.

Grants for research relevant to problems of mental health may be made on the recommendation of the National Advisory Mental Health Council to public and private institutions and to individuals. Application forms are obtainable from the Research Grants Division, National Institute of Health, U. S. Public Health Service, Bethesda 14, Md. To assist in development of adequate mental health programs at the community level, grants-in-aid will be made to states on a matching basis. These funds are handled by the mental health authority of each state. Professional and lay people interested in specific service projects should bring their ideas to the attention of their state mental health authority. Funds to inaugurate actual operation of the programs depend on Congressional appropriations. The earliest date such funds may be available is July 1.

PUBLIC HEALTH NURSING WEEK

Marking the seventieth anniversary of public health nursing in the United States, Public Health Nursing Week will be celebrated April 20-26. The National Organization for Public Health Nursing, 1790 Broadway, New York 19, which is sponsoring the observance in cooperation with the U. S. Public Health Service, states that the objectives will be to recruit 8,000 public health nurses urgently needed throughout the country, to promote better understanding of public health nursing as a service for everybody regardless of size of income, and to encourage the organization of public health nursing services.

PERSONAL

Dr. W. V. Wallace, senior surgeon (reserve) U. S. Public Health Service, has become district public health officer with headquarters at Port Arthur, Texas, and also will be in charge of the quarantine station at Sabine, succeeding Dr. Roy Pitre, who resigned to enter private practice. Dr. Wallace served four years in the Navy during the recent emergency, attaining the rank of commander.

VETERANS ADMINISTRATION

NEW HOSPITAL AT TOMAH, WIS.

The 1,172 bed veterans hospital at Tomah, Wis., has been nearly completed, and Dr. G. D. Rice, veteran of some twenty-two years' service in veterans' hospitals, has been named manager of the hospital. Dr. Rice is a graduate of the University of Minnesota Medical School and is a veteran of World War I. The new hospital will occupy a 600 acre farm site. In addition to the ten new buildings, the hospital has taken over all buildings formerly used by the Department of Interior as an Indian boarding school, which buildings have been remodeled at a cost of more than $300,000.

$22,000,000 FOR A NEUROPSYCHIATRIC HOSPITAL

Army engineers have let construction contracts for the Veterans Administration neuropsychiatric 1,984 bed Franklin Delano Roosevelt Hospital at Peekskill, N. Y. Five different firms will build this hospital at a total cost of $22,400,456, the War Department has announced. The Peekskill installation is one of seventy-four hospitals and twenty-three major additions in the $770,000,000 program undertaken by the Army engineers for the Veterans Administration.

PERSONALS

Dr. Morris K. Smith, assistant professor, clinical surgery, Cornell University Medical School, has been appointed full time chief of the surgical service at the Veterans Halloran General Hospital, Staten Island, N. Y.

Dr. R. D. Green, for many years on the staff of the Veterans Hospital, Lincoln, Neb., has been assigned chief medical officer for the Veterans Administration at Sioux Falls, S. D., where a new veterans' hospital is being built.

Dr. James A. Brussell, assistant director, Willard State Hospital, Willard, N. Y., has been appointed consultant in neuropsychiatry to the Veterans Hospital at Sampson, N. Y.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest: such as relate to society activities, new hospitals, education and public health.)

ALABAMA

Meeting of Obstetricians and Gynecologists.—The Alabama Association of Obstetricians and Gynecologists held its annual meeting February 20 in Birmingham. Guest speakers included Drs. F. Bayard Carter, Duke University School of Medicine; Dr. Willard R. Cooke, University of Texas Medical Branch, Galveston; Howard B. Lewis, Ph.D., University of Michigan Medical School, Ann Arbor, and Dr. George N. Papanicolaou, Cornell University Medical College, New York City.

CALIFORNIA

Mr. Gillespie Retires.—After twenty-eight years as chief of the Bureau of Sanitary Engineering, State Department of Health, C. G. Gillespie, Oakland, retired from state service in January. Mr. Gillespie was recently appointed special consultant to the sanitation study section of the National Institute of Health, Washington, D. C. *California's Health*, published by the state department of health, states that Mr. Gillespie "more than any other person is responsible for the development in California of the modern public health program in sanitary engineering."

John Fulton to Give the George Dock Lecture.—Dr. John F. Fulton, Sterling professor of physiology, Yale University School of Medicine, New Haven, Conn., since 1930, and author of the recent biography of Harvey Cushing, will deliver the annual George Dock lecture at the Los Angeles County Medical Association on March 17 at 8 p. m. His subject will be "Harvey Cushing and His Library." Dr. Fulton, a graduate of Harvard Medical School in 1927, was a member of the National Research Council during the war and directed much of the original work on the physiology of aviation.

Health Survey in Seven Cities.—The California State Departments of Public Health and Education are sponsoring a preliminary study of school absenteeism in seven California cities during the spring term. It will be under the direction of Bernice Moss, Ed.D., consultant in health education of the state department of education. The objectives are (1) to assemble data regarding the extent of illness among children together with the specific illnesses and other causes responsible for school absences and (2) to explore ways and means of utilizing these data in improving health teaching so that preventable illnesses may be reduced and the health of school children improved.

FLORIDA

Narcotic Violation.—Dr. Harry M. Elarbee, Pahokee, pleaded guilty in the U. S. District Court at Miami to violation of the Federal Narcotic Law Oct. 16, 1946, was sentenced to a term of fifteen months and placed on probation for a period of two years to commence after completion of his sentence.

Air Base Hospitals Taken Over by Tuberculosis Board.—By taking over two Army Air Base Hospitals the State Tuberculosis Board has provided Florida with six hundred additional beds and a total of three institutions devoted entirely to the hospitalization of tuberculosis patients. The Northwest Florida Tuberculosis Sanatorium, near Marianna, together with 145 acres of land, was originally the Army Air Base Hospital. Beds ready for occupancy number two hundred, and fifty more can be provided. The Southwest Florida Tuberculosis Sanitarium, Tampa, providing four hundred beds and a possible one hundred more, was formerly the Army Air Base Hospital at Drew Field and includes 160 acres of land. The board agreed that the present buildings will be used only until the legislature provides funds with which modern, compact plants can be built. Dr. William D. Rosborough, a graduate of the University of Pennsylvania College of Medicine who has special training in tuberculosis, will superintend the Marianna institution; Dr. Merlin H. Draper, for nineteen years superintendent at the Irene Byron Sanatorium, Fort Wayne, Ind., will superintend the one at Tampa. Dr. Rollen D. Thompson, superintendent of the Florida State Sanatorium at Orlando, has been made general superintendent over all state sanatoriums, but will retain his present position also. Two more sanatoriums remain to be provided in carrying out the plan of an institution for each of the five tuberculosis districts in the state.

ILLINOIS

Society for Mental Hygiene.—The annual meeting of the Illinois Society for Mental Hygiene will be held March 20 at the Standard Club, 320 South Plymouth Court, Chicago. Dr. Andrew C. Ivy, vice president, University of Illinois, in charge of professional schools, will give a physiologic interpretation of appetite.

Counties Without Hospitals.—The Illinois State Health Department, on completing a survey which included a study of 686 hospitals and nursing homes in Illinois, reports that 52 of the 102 counties in Illinois have no hospitals or have hospitals "in name only" without adequate modern facilities. Baxter K. Richardson, Springfield, senior administrative officer, said the survey showed that the southern part of the state had the greatest deficiency in hospital facilities, with twenty-eight counties having no hospital of any kind and twenty-four lacking institutions which could be classified as hospitals.

Committee on Purchase of Hospital Care.—Dr. Roland R. Cross, director of the Department of Public Health, Springfield, has appointed an eleven man technical advisory committee on the purchase of hospital care, which will serve certain governmental agencies. The Department of Public Health, hospital accounts analyst service in the division of maternal and child hygiene, will assume the responsibility for collecting and approving hospital cost analyses for these government agencies, which are the Division of Maternal Care and Child Hygiene (with EMIC and premature programs), the Division of Communicable Diseases (with the ophthalmia programs), the Division of Services for Crippled Children, Vocational Rehabilitation and the Illinois Public Aid Commission.

Chicago

Visit of Capetown Physiologist.—Dr. James T. Irving, head of the physiology department, University of Capetown, South Africa, is working for ten weeks at the University of Illinois College of Dentistry on tooth formation and calcification. Dr. Irving has written widely on carbohydrate metabolism, nutrition and tooth formation.

Experimental Neurosis.—At the January meeting of the National Advisory Health Council in Washington, D. C., the council approved a grant of $11,600 for a three year study of the neurophysiology of experimental neurosis to be conducted at Northwestern University Medical School under the direction of Dr. Jules H. Masserman, assistant professor of nervous and mental diseases.

Personal.—Dr. Andrew C. Ivy, vice president of the University of Illinois in charge of professional colleges, Chicago, has been elected to the board of directors of the John Crerar Library.——Dr. Paul L. Shallenberger, formerly on the staff of Wesley Memorial Hospital and instructor in medicine at Northwestern University Medical School, has joined the staff of the Robert Packer Hospital, Sayre, Pa. Dr. Shallenberger was recently released from service in the army with the rank of colonel.

Two Year Internship at Cook County Hospital.—Beginning July 1, Cook County Hospital will require two year internships to help offset the shortage of general practitioners. Dr. Karl A. Meyer, medical superintendent, said all young doctors at the hospital will be required to undergo this general training before being permitted to specialize. The hospital required an eighteen month internship before the war, but the time was cut to one year under the government's speed up program. The two year internship will include work in obstetrics, general diagnosis, gynecology, contagious diseases, psychiatry, pediatrics and eye, ear and throat ailments.

Irish Lectureship Established.—The first annual Henry E. Irish Lectureship will be given by Dr. Tom D. Spies, University of Cincinnati, at the University of Illinois College of Medicine, April 18 at 5 p. m. in room 221. The subject of the address will be "Modern Research in Nutrition." The lectureship is sponsored by Eta chapter of Alpha Kappa Kappa medical fraternity in honor of the late Dr. Henry E. Irish, a former professor of the University of Illinois College of Medicine and a member of the fraternity. The lectureship will be followed by the annual Tri-Chapter Banquet of the three Chicago chapters of the fraternity, at which Dr. Spies will be guest of honor, and Dr. Andrew C. Ivy, vice president of the University of Illinois, will be the principal speaker.

Institute for Study of Rheumatic Fever.—Gifts amounting to $60,000 have been received by Northwestern University Medical School for the establishment of an Institute for the Study of Rheumatic Fever. The grants, comprising $45,000 from the United States Public Health Service and $15,000 from the American Cyanamid Company, Lederle Laboratories division, were announced March 7 by Dr. J. Roscoe Miller, dean of the medical school. They represent initial funds for the project, which will require the full time services of at least nine, including as director Dr. Alvin F. Coburn, formerly assistant professor of medicine in the Columbia University College of Physicians and Surgeons, New York City. In the Rheumatic Fever Research Institute and its laboratories, housed on one floor set aside in the Municipal Contagious Disease Hospital, new knowledge of the mechanism of the disease and methods for prevention and treatment will be sought. It is planned to set up eight units in the institute, four in biology and an equal number in chemistry. In conjunction with the fundamental research work, the institute will have the services of additional investigators to engage in clinical research in collaboration with hospitals concerned with the care of rheumatic children. It is expected that the laboratories and other facilities will be completed and ready for operation by July.

KANSAS

Grants for Research at the Menninger Foundation.—At the January meeting of the National Advisory Mental Health Council in Washington, D. C., a grant of $26,500 was approved for a five year investigation of the use of hypnosis in psychotherapy and the nature of the hypnotic state under the direction of Margaret Brenman, Ph.D., and Dr. Merton M. Gill of the Menninger Foundation, Topeka. The council also approved a grant of $18,795.50 for a two year study of the early phases of personality development by Dr. Eunice M. Leitch of the Menninger Foundation.

Cancer Clinics for March.—A series of clinics on cancer arranged by the committee on control of cancer of the Kansas Medical Society, the University of Kansas School of Medicine, Lawrence-Kansas City, and the Kansas State Board of Health are being presented in five cities during March. Drs. Eldridge H. Campbell, professor of surgery, Albany Medical College, Albany, N. Y., and George G. Finney, assistant professor of surgery, Johns Hopkins University School of Medicine, Baltimore, present the course: March 8 and 9, Topeka; March 10 and 11, Salina; March 11 and 12, Hayes; March 13 and 14, Wichita, and March 15 and 16, Parsons. Physicians may register by sending a $5 fee to the University Extension Division, University of Kansas, Lawrence.

MASSACHUSETTS

Appoint Medical Director of Riggs Foundation.—Dr. Robert P. Knight, chief of staff of the Menninger Clinic in Topeka, Kan., has been appointed medical director of the Austen Riggs Foundation at Stockbridge, effective September 1, Ernest Stauffen Jr., New York City, chairman of the board of trustees, announced. Dr. Knight is a graduate of Northwestern University Medical School, Chicago, secretary of the American Psychoanalytic Association and a former president of the American Psychopathological Association. The foundation, established in 1919 by Dr. Austen Fox Riggs, provides psychiatric treatment, trains psychiatrists and conducts research in the field of psychotherapy. It also maintains a clinic in Pittsfield where consultative service is provided to community physicians and health, social and civic agencies.

Boston University Appointments.—New faculty appointments and promotions at the Boston University School of Medicine were announced February 17. In the department of medicine Dr. John P. Rattigan, assistant in medicine, was promoted to assistant professor, while Drs. James W. Culbertson, Edward D. Fries, William L. Hewitt, Dera Kinsey and George W. Waring were promoted from assistants in medicine to instructors. Dr. Burton C. Grodberg was promoted from assistant in gynecology to instructor. New appointments included Drs. Thomas L. Hartman, Boston, and Timothy R. Talbor Jr., Boston, instructors in medicine: Philip Kramer; Boston, Louis Bachrach, Maynard, William E. Greer, Boston, Thomas S. Perrin Jr., Samuel C. Cohen and Donald L. John, Boston, assistants in medicine. In surgery new appointments are Drs. John B. Graham, Newton, Donald F. Rayl, Pierre, S. D., Robert Bolduc, Worcester, and Joseph Stanton, Newton, assistants in surgery and John J. Byrne, Weston, instructor in surgery. Other appointments are Drs. Paul Massick, Boston, and Leslie R. Bragg, Webster, assistants in radiology; Lazarus Secunda, Boston, and Herbert I. Harris, Cambridge, instructors in psychiatry; John L. Morrison, Waltham, assistant in gynecology, and David B. Stearns, Boston, assistant professor in urology.

MICHIGAN

Crane Memorial Lecture.—The annual Crane Memorial Lecture was delivered by Dr. Lawrence Reynolds, Detroit, editor of the *American Journal of Roentgenology and Radium Therapy*, before the Kalamazoo Academy of Medicine, January 18, on "Medical Use of Radioactive Isotopes." The annual lecture honors the late Dr. Augustus W. Crane, pioneer in the field of roentgenology.

Syphilis Higher Among Teen Age Groups.—The syphilis rate among teen agers in Michigan in both rural and city areas is 33 per cent higher today than it was six years ago, according to figures released by the state health department. According to Dr. William DeKleine, state health commissioner, Lansing, investigations disclosed that the boys and girls had little or no knowledge of fundamental facts about venereal disease.

Director of Psychiatry Appointed.—The appointment of Dr. John M. Dorsey, special professor and chairman of the department of psychiatry at Wayne University College of Medicine, Detroit, as director of the psychiatric division of the City of Detroit Receiving Hospital was recently announced by the Detroit Common Council. Under the new arrangement the university's psychiatric students will work under the same director at the hospital as at the college in their research and training activities.

Food Poisoning—Cream Pies.—The state department of health laboratory reported February 18 that a hemolyticus organism in cream pies was responsible for the poisoning of 243 persons in Detroit over the preceding weekend. The cream pies were said to have been heavily contaminated, Dr. Joseph G. Molner, Detroit, deputy health commissioner, said. The company has stopped making cream pies. The health department examined 17 employees of the bakery to determine whether any of them might have caused the infections.

Department of Industrial Medicine.—A department of industrial medicine and training course for medical graduates covering all phases of industrial medicine is to be established at Woodward General Hospital, Detroit. It is intended to train doctors for service with the medical divisions of both large and small industrial plants. More than $400,000 has been collected toward building the $2,500,000 hospital to be built at Thirteen Mile Road near Woodward Avenue. Wayne University is collaborating with the advisory board of Woodward General Hospital medical staff in setting up the department and training staff.

County Society Approves Epileptic Clinic.—The council of the Wayne County Medical Society has approved the establishment of a proposed clinic for epileptic patients outlined in the report of the medical education committee. The purpose of the clinic is to investigate the problem of epilepsy by social and medical treatment of patients on an outpatient basis. Of the 7,000 epileptics in Detroit, only about 700 need institutional care, said Arthur J. Derbyshire, Ph.D., Detroit. The clinic will be financed by private contributions and income from patients who will be secured by referrals from private physicians and agencies. An advisory board set up by the Wayne County Medical Society will govern the medical policy.

MINNESOTA

E. Starr Judd Lecture.—The fourteenth E. Starr Judd lecture will be given by Dr. Isidor S. Ravdin, John Rhea Barton professor of surgery, University of Pennsylvania, April 15 at 8:15 in the auditorium of the Museum of Natural History, Minneapolis. Dr. Ravdin's subject is "Changing Concepts in Surgical Care." The late E. Starr Judd, an alumnus of the Medical School of the University of Minnesota, established this lectureship in surgery a few years before his death.

NEBRASKA

Personal.—Dr. John A. Waggener, 94, Humboldt, a practicing physician for 68 years until his recent retirement, was lately awarded the Humboldt Rotary Club's honorary membership for distinguished community service.

Grant to Continue Research.—Under a grant of $11,980 by the National Foundation of Infantile Paralysis, Dr. Archibald R. McIntyre, chairman, department of physiology and pharmacology, University of Nebraska College of Medicine, Omaha, will continue research on muscle physiology.

State Health Director.—Dr. Wallace S. Petty, Lincoln, has been reappointed state director of health. He joined the department in January 1942 after being in public health work in several Midwestern and Southern states. Dr. Petty graduated from Keokuk (Iowa) Medical College of Physicians and Surgeons in 1908 and did graduate work in public health at the University of Minnesota. In 1942 he was elected vice president of the International Society of Medical Health Officers at the American Public Health Association meeting in St. Louis.

NEW YORK

County Postgraduate Instruction.—Postgraduate instruction has been arranged by the council committee on public health and education of the Medical Society of the State of New York and the New York State Department of Health in March for the following counties:

March 11, Chenango County, 7 p. m., Norwich Club, Norwich, Dr. Frederick N. Marty, Syracuse University College of Medicine, Use of Blood and Blood Substitutes and Derivatives.

March 11, Nassau County, 4 p. m., Nassau Hospital, Mineola, Dr. William B. Sherman, Roosevelt Hospital, New York City, Allergy, and March 18, Dr. Stockton Kimball, dean, University of Buffalo School of Medicine, Treatment of Disorders of the Liver.

March 12, Otsego County, Tunnicliff Inn, Cooperstown, 6:30 p. m., Dr. Leslie A. Osborn, University of Buffalo School of Medicine, Recognition and Management of Psychiatric Problems in General Practice.

March 13, Jefferson County, 6:30 p. m., Hotel Woodruff, Watertown, Dr. Walter Modell, Cornell University Medical College, New York City, Management of the Failing Heart.

March 13, St. Lawrence County, 12 noon, Arlington Inn, Potsdam, Dr. Walter Modell, Management of the Failing Heart.

New York City

Changes in Status of Licensure.—The New York State Board of Medical Examiners on June 3 restored the state license to practice medicine to Dr. David Newman.

Herman M. Biggs Memorial Lecture.—Dr. Haven Emerson, emeritus professor of public health practice, Columbia University College of Physicians and Surgeons, will deliver the Herman M. Biggs Memorial Lecture April 3 at 8:30 p. m. at the New York Academy of Medicine on "The Hospital Survey and Construction Act and a Nationwide Health Program." The lecture, given at the concluding session of a three day institute on public health, is under the auspices of the committee on public relations.

Harvey Lectures. — The fifth Harvey Lecture of the current series at the New York Academy of Medicine was delivered February 20 by John J. Bittner, Ph.D., George Chase Christian professor of cancer research and director of the division of cancer biology, department of physiology, University of Minnesota, on "The Causes and Control of Breast Cancer in Mice." Dr. James L. Gamble, professor of pediatrics, Harvard Medical School, Boston, will deliver the sixth Harvey lecture at the Academy March 20 on "Physiological Information Gained from Study on the Life Raft Ration."

OHIO

Residency Opening.—Glenville Hospital, 701 Parkwood Drive, Cleveland 8, has announced a mixed residency opening July 1. Further information may be obtained by writing Arthur B. Harris, superintendent.

Dr. Zollinger to Head Clinical Surgery Department.—The appointment of Dr. Robert M. Zollinger, Columbus, as chairman of the department of clinical surgery in Ohio State University College of Medicine, Columbus, was announced recently. He replaces Dr. Verne A. Dodd, who has resigned to devote full time to other responsibilities as professor of surgery and chief of staff of Starling-Loving University Hospital. Dr. Zollinger is a graduate of Ohio State University. He taught previously at Harvard Medical School and was on the staff of the Peter Bent Brigham Hospital, Boston, before serving overseas as a colonel in the medical corps in the recent war.

PENNSYLVANIA

Secretaries-Editors Conference.—The 1947 secretaries-editors conference will be held this year in Harrisburg the afternoon and evening of March 20 and the morning of March 21. The president of each county society and the chairman of each county society's committees on public health legislation, medical economics and public relations will be guests of the state medical society at the conference. Speakers from national, state and county medical societies will discuss public relations, pending health legislation, voluntary insured medical service and medical service for veterans. A panel forum is planned for Friday morning.

Philadelphia

Personal.—Dr. William F. Brehm has joined the staff of Robert Packer Hospital, Sayre, Pa. Dr. Brehm recently was released from service in the army and since then has been working as an anesthetist with Dr. Henry S. Ruth in Philadelphia.

Grants to Temple University. — The National Cancer Institute of Bethesda, Md., has made a grant of $10,000 to the Temple University School of Medicine and Hospital for the study of the relationship of cellular injury to the development of repair and neoplastic tendencies. Another grant of $20,750 a year has been received from the U. S. Public Health Service for an investigation of the heart and circulation.

SOUTH CAROLINA

Dr. Guerry Honored. — A bronze plaque bearing Dr. LeGrand Guerry's name was unveiled when the northwest wing of Columbia Hospital, Columbia, was dedicated January 20. Dr. George H. Bunch Sr. delivered the address before the hospital board of trustees, members of the Columbia Medical Society and other guests. Dr. Guerry is a graduate of the University of Georgia School of Medicine, Augusta, and is a past president of the Southern Surgical Association. He has been associated with the hospital for nearly fifty years.

Funds for Planning Health Projects. — The Federal Works Agency has granted South Carolina more than $400,000 to finance the planning of one hundred and twenty health facility projects with a final cost of over $13,000,000, according to H. M. McElveen, special representative of the state board of health. The largest approved project is the Charleston County Tuberculosis Association's $750,000 plan for a new tuberculosis hospital. Counties have been urged by the state board of health to file projects for health center buildings if present facilities are not adequate, and state health officials will help in planning and obtaining approval.

TEXAS

Dr. Cary Honored on 75th Birthday.—The Southwestern Medical Foundation was host at a dinner in Dallas, February 28, given in celebration of the 75th birthday of Dr. Edward Henry Cary. Among those present were Dr. Elmer L. Henderson, Louisville, Ky., president of the Southern Medical Association, who spoke on "Contributions to Medicine in the South"; Dr. Charles Gordon Heyd, New York City, whose subject was "The Expansive Force of Medical Education"; Dr. Morris Fishbein, Chicago, whose subject was "The Medical Profession's Benefactor"; Dr. Harrison H. Shoulders, Nashville, Tenn., President of the American Medical Association, who spoke on "American Medicine's Elder Statesman," and Dr. John G. Young, president, Dallas County Medical Society, "Viewed Through the Eyes of the Dallas Medical Profession." Among many honors which have been bestowed on Dr. Cary in his long and distinguished career have been the presidencies of the Dallas County, Texas State, Texas Ophthalmological and Otological, Southern Medical and the American Medical associations. He has been president of the executive board of the National Physicians Committee, the Philosophical Society of Texas, the Medical Arts Hospital and the Group Hospital Service. He was for many years dean of Baylor University Medical School and professor of ophthalmology. During World War I Dr. Cary organized the Baylor Medical and Surgical Unit, which served with distinction in France. In 1939 he and a group of Dallas business men organized the Southwestern Medical Foundation, which shortly thereafter launched the Southwestern Medical College. The community in which Dr. Cary has lived for so many years recently bestowed on him for his service to the community the Linze Award. President Umphrey Lee of Southern Methodist University, Dallas, at the end of the banquet presented to Dr. Cary the sum of $20,000 for scholarships in his name.

WASHINGTON

Course for Food Handlers.—A course in food handling required by the county food ordinances for any person working in a food establishment started January 27 in Vancouver. Classes will meet each Monday afternoon and evening through April 14. Organizations responsible for sponsoring the course are Clark County District Health Department, the southern division of the Washington State Restaurant Association, the Vocational Education Division and Culinary Alliance Local No. 425.

WISCONSIN

Brief Intensive Course in Pediatrics.—The University of Wisconsin Medical School, Madison, is again presenting a brief intensive course in pediatrics for the general practitioner. It will be held April 7 to 11 at the medical school and the State of Wisconsin General Hospital, Madison. Material includes diabetes mellitus in children, infant-feeding problems and the feeding of the premature infant, renal disease in children, hemolytic anemia due to Rh incompatibility, respiratory diseases and tuberculosis in childhood, ringworm infection in children and the technic of intravenous and bone marrow transfusion. The course will be under the direction of Drs. John E. Gonce Jr., professor of pediatrics; Horace K. Tenney Jr. and Kenneth E. McDonough of the pediatric division. Details may be obtained from Dr. Llewellyn R. Cole, Coordinator of Graduate Medical Education, The University of Wisconsin Medical School, 418 North Randall Avenue, Madison 6.

CANADA

Personal.—Dr. C. B. Weld, professor of physiology at Dalhousie University Faculty of Medicine, Halifax, N. S., has been elected president of the Canadian Physiological Society.

Provincial Minister of Health Appointed.—The appointment of Dr. Donald Griffith McKerracher, Barrie, Ont., as provincial psychiatrist and commissioner of mental services in Saskatchewan was recently announced by the minister of health. Dr. McKerracher has served with the Ontario Department of Public Health.

Appoint Professor of Medicine.—Dr. Clyde W. Holland, Halifax, Nova Scotia, has been appointed the J. C. Troy professor of medicine and head of the department at Dalhousie University. Dr. Holland has been director of the student health service, Dalhousie University, since 1931 and is also attending physician at Victoria General Hospital and consulting physician at Grace Maternity Hospital. This chair in medicine was founded by the late Hon. J. C. Troy, former lieutenant governor of the province, who bequeathed the residue of his estate to the university to be used for medical research.

GENERAL

Homer Folks Resigns.—Homer Folks, New York City, after serving more than half a century as secretary of the State Charities Aid Association, has resigned. No successor has yet been named. Mr. Folks's contributions in the field of public health and social service include pioneering activities in organized movements for improvements of public institutions for the care of children, for public relief, for the prevention of tuberculosis and for the promotion of preventive medicine and mental hygiene.

Orthoptic Council Examinations.—The next examination for technicians by the American Orthoptic Council will be held in September-October. The written examinations on Friday, September 12, will be held at various cities in the country. Only those passing the written examinations will be permitted to take the oral and practical tests to be given in Chicago, Saturday, October 11. Applications on official forms must be received before July 1. Address the American Orthoptic Council, 23 East 79th Street, New York 21.

Colonel Craig Resigns as Editor.—The resignation of Col. Charles Franklin Craig, San Antonio, as editor of the *American Journal of Tropical Medicine* was announced in the February issue of *Tropical Medicine News*. Colonel Craig, who has been editor for over twenty years, received his M.D. degree from Yale Medical College in 1894 and for many years was a member of the U. S. Army Medical Corps. He served as professor of bacteriology and parasitology and preventive medicine and director of laboratories, Army Medical School, Washington, D. C., 1920-1922. Later he served on the faculty of Tulane University of Louisiana School of Medicine, New Orleans, as professor of tropical medicine and director of the department.

Practical Nurse Training Programs.—The U. S. Office of Education has made a study of the practical nurse occupation. The president of the American Association for Practical Nurses Education was chairman of the committee, and Arthur B. Wrigley, state supervisor of trade and industrial education in New Jersey, was director of the study. The committee represented national nursing, hospital, public health and educational organizations and the trained practical nurse group. The report, entitled "Practical Nursing—An Analysis of the Practical Nurse Occupation with Suggestions for the Organization of Training Programs," Misc. No. 8, can be purchased from the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C., for 55 cents.

Association for Study of Goiter.—The American Association for the Study of Goiter will meet April 3-5 under the presidency of Dr. W. B. Mosser, Kane, Pa., at the Biltmore Hotel, Atlanta, Ga. At a joint meeting of the association and the Fulton County Medical Association at the Academy of Medicine, Dr. Arnold S. Jackson, Madison, Wis., will speak on "Traditions in Surgery" and Dr. John Hertz, Copenhagen, Denmark, on "Studies of Thyrotoxicosis." Among subjects to be discussed by leaders in this field throughout the country are indications for surgery in hyperthyroidism, evaluation of newer methods of treatment of thyrotoxicosis, directions of present day thyroid research, possible use of radioactive iodine in the diagnosis of thyroid disease, thyrotoxicosis without elevated metabolism and thiouracil and related substances in the treatment of toxic goiter.

Graduate Training in Psychoanalysis.—The Psychoanalytic Clinic for Training and Research, department of psychiatry, College of Physicians and Surgeons, Columbia University, New York, offers a three year graduate residency training program in psychoanalytic medicine to qualified physicians. On fulfilment of the requirements, students will be awarded a certificate of training in psychoanalytic medicine. Students who, in addition, undertake satisfactory investigative work and pass a supplementary examination in the related basic sciences may also be awarded the advanced degree of Doctor of Medical Science. The intramural psychiatric residency starts on July 1, and the required courses of lectures and seminars start on October 1. Those who have already completed two years' residency in a mental hospital recognized by the American Medical Association will be allowed credit.

Borden Awards.—Nine American scientists have received Borden Awards of a gold medal and $1,000 for exceptional contributions to scientific research during 1946. The awards are administered by eight professional and scientific associations. Among the associations and the 1946 recipients are the American Chemical Society, Ira A. Gould Jr., Ph.D., professor of dairy manufacturing, University of Maryland, for studies in the changes in milk and milk products; American Academy of Pediatrics, Dr. James L. Gamble, professor of pediatrics, Harvard Medical School, Boston for pioneer work in the field of salt and water balances in the human body; the American Institute of Nutrition, Dr. Philip C. Jeans, professor and head of pediatrics, and Genevieve Stearns, Ph.D., research professor of pediatrics, both of State University of Iowa College of Medicine, Iowa City, for fundamental contributions in the field of child nutrition and for research on the nutritive value of milk.

Scholarships for Prevention of Blindness.—The National Society for the Prevention of Blindness announces the establishment of nine one year scholarships of $1,000 each for students interested in professional education to qualify for positions in sight conservation and prevention of blindness. Positions are open in public and private prevention of blindness agencies, hospitals and organizations offering medical care programs. The positions require both community organization and case work skills. Scholarships will be available beginning in the spring term of 1947. Applications may be secured by writing the National Society for the Prevention of Blindness, 1790 Broadway, New York 19. In addition, the Delta Gamma Fraternity of College Women has announced the establishment of a fund for scholarships in the fields of prevention of blindness and sight conservation exemplified by specialized prevention study, training of orthoptic technicians, training of teachers for sight-saving classes and training of workers for the preschool blind. Information on basic qualifications for the various fields of the Delta Gamma scholarships may be secured from Mrs. Richard P. Miller, 39 West Jefferson Road, Pittsford, N. Y.

Marriages

Sidney Prystowsky, Charleston, S. C., to Miss Grace Buchstane of West Hartford, Conn., in Hartford October 20.

Anthony Rullan, Yauco, Puerto Rico, to Miss Jane Barbara Hryhorczuk of New York August 3.

Robert Yates Hayne Thomas to Miss Mary Bolling Duncan, both of Jacksonville, Fla., in October.

Bill Morris Phillips to Miss Marjoria Elaine Prestridge, both of Bogue Chitto, Miss., October 17.

David William McLean, to Miss Eleanor Virginia Myers, both of Meridian, Miss., in October.

John Roy Hege Jr., Raleigh, N. C., to Miss Dorothy White Huff of Birmingham, Ala., recently.

De Forest E. Hale, Manlius, N. Y., to Miss Alice Barker of Clifton Springs in September.

Alvis Joe Scull Jr. to Miss Gloria Robison, both of Houston, Texas, September 17.

Joseph Brannen Ganey to Miss Eleanor Mays Bass, both of Bradenton, Fla., October 19.

Paul Irving Ossen to Mrs. Bernice Ossen, both of Quincy, Mass., October 20.

Deaths

Clarence Martin Jackson ⊕ Minneapolis; born in What Cheer, Iowa, April 12, 1875; University of Missouri School of Medicine, Columbia, 1900; an affiliate Fellow of the American Medical Association; president of the Minnesota State Board of Examiners in the Basic Sciences; since 1941 professor emeritus of anatomy at the University of Minnesota Medical School, where he had been professor and head of the department of anatomy since 1913; first became associated with the school in 1900 as assistant professor of anatomy, became professor in 1902 and head of the department in 1913; served as dean from 1909 to 1913; in 1917-1918 and in 1925 dean of the University of Minnesota Graduate School, where he was professor of anatomy; at one time secretary of the Missouri State Anatomical Board; formerly professor of anatomy and head of the department at the University of Missouri and later appointed dean of the medical school; in 1923-1924 chairman of the medical division of the National Research Council; past president and served as chairman of the committee on anatomic nomenclature, American Association of Anatomists; the local chapter of Phi Beta Pi medical fraternity, of which he was a member, for several years sponsored the annual "Jackson Lecture," in which many distinguished scientists participated; in 1923 awarded the LL.D. degree by the University of Missouri in recognition of his services to education; author of "Effects of Inanition and Malnutrition upon Growth and Structure"; co-author of the "Measurement of Man" ; at one time editor of Morris's Human Anatomy; died January 17, aged 71, of Parkinson's disease.

Frank Earl Bass, Shelbyville, Ind.; Medical College of Indiana, Indianapolis, 1903; member of the American Medical Association; served as secretary-treasurer of the Shelby County Medical Society; died January 4, aged 65, of carcinoma.

Roger Bernard Brewster, Siloam Springs, Ark.; Kansas City (Mo.) Medical College, 1905; formerly on the staff of the Kansas City General Hospital in Kansas City, Kan., where he had been physician for the Missouri Pacific Railroad and the Kansas City Gas Company; served during World War I; died January 6, aged 71, of lobar pneumonia.

Michael Brown, Dalton, Ky.; University of Louisville (Ky.) Medical Department, 1890; died January 12, aged 83, of heart disease.

Fred Welden Caudill ⊕ Louisville, Ky.; University of Louisville School of Medicine, 1926; commissioned passed assistant surgeon in the U. S. Public Health Service in 1927; formerly health officer of Scott and Perry counties; served as epidemiologist of the state health department; on the staff of Crippled Children and Children's Free hospitals; died January 12, aged 46, of encephalitis.

Clarence Alonzo Cheever, Boston; Harvard Medical School, Boston, 1883; member of the American Medical Association; died Dec. 31, 1946, aged 88, of cerebral hemorrhage.

Harry Louis Claassen ⊕ Cincinnati; University of Cincinnati College of Medicine, 1918; professor of dermatology at his alma mater; specialist certified by the American Board of Dermatology and Syphilology; member of the American Academy of Dermatology and Syphilology; director of the department of dermatology at the Cincinnati General Hospital; died January 11, aged 54, of coronary occlusion.

William Jasper Curry, Rogers, Ark. (licensed in Arkansas in 1903) ; member of the American Medical Association; health officer; died January 4, aged 95, of heart disease.

Isaac Davis ⊕ Pittsburgh; Johns Hopkins University School of Medicine, Baltimore, 1914; died Dec. 25, 1946, aged 58.

George Claude Dittman ⊕ St. Paul; University of Minnesota College of Medicine and Surgery, Minneapolis, 1904; served during World War I; affiliated with St. Joseph Hospital, where he died January 9, aged 64, of cardiac infarction.

Stephen Edward Donlon ⊕ Chicago; Rush Medical College, Chicago, 1895; an affiliate Fellow of the American Medical Association; fellow of the American College of Surgeons; at one time on the faculty of his alma mater; on the staff of St. Anthony de Padua Hospital; died January 6, aged 82, of cerebral hemorrhage.

Earl Bishop Downer, Youngstown, Ohio; Ohio Medical University, Columbus, 1907; U. S. Army Medical School in 1914; at one time instructor at the Ohio Medical University; served as American Red Cross surgeon in Belgrade, Serbia, during the typhus epidemic and German invasion; director of the Edwin Gould Relief Mission to Russia; formerly on the staff of St. Elizabeth's Hospital; author of several books; died January 1, aged 61, of coronary thrombosis.

George Estle Embry, Morgantown, Ky.; University of Louisville Medical Department, 1910; member of the American Medical Association; died January 10, aged 60, of cerebral hemorrhage.

Hannibal Claude Fortune, Payson, Ill.; St. Louis University School of Medicine, 1905; veteran of the Spanish-American War; died January 4, aged 74, of coronary thrombosis.

George Freiman ⊕ Brooklyn; Long Island College Hospital, Brooklyn, 1914; clinical professor of ophthalmology at his alma mater; specialist certified by the American Board of Ophthalmology; member of the American Academy of Ophthalmology and Otolaryngology; member of the courtesy staff of the Brooklyn Eye and Ear Hospital; fellow of the American College of Surgeons; served during World War I; affiliated with the Long Island College Hospital, where he died January 3, aged 53, of coronary occlusion.

Oliver George Grady, Orrville, Ohio; Starling-Ohio Medical College, Columbus, 1909; member of the American Medical Association; served during World War I; president of the county health department; died in the City Hospital, Massillon, January 11, aged 62, of carcinoma of the bladder.

Daniel Heimlich ⊕ Los Angeles; Western Reserve University Medical Department, Cleveland, 1892; member of the Ohio State Medical Association; served during World War I; died in the Cedars of Lebanon Hospital January 7, aged 78, of coronary sclerosis.

Maurice Alphonsus Regis Hennessy, Cleveland; St. Louis University School of Medicine, 1926; member of the American Medical Association, American Psychiatric Association and the American Orthopsychiatric Association; specialist certified by the American Board of Psychiatry and Neurology; demonstrator of nervous diseases at Western Reserve University School of Medicine; on the staff of St. Vincent Charity Hospital; died Dec. 31, 1946, aged 46, of heart disease.

Samuel W. Hervey, Fortville, Ind.; Medical College of Indiana, Indianapolis, 1887; Medical College of Ohio, Cincinnati, 1891; member of the American Medical Association; died in the Methodist Hospital, Indianapolis, January 8, aged 81, of abdominal carcinomatosis.

John Elmer Hughes ⊕ Shawnee, Okla.; Northwestern University Medical School, Chicago, 1906; past president of the Pottawatomie County Medical Society; later founder and co-owner of the Anderson, Carson and Hughes Hospital; on the courtesy staff of the Shawnee Municipal Hospital; on the staff of the Shawnee Indian Sanatorium; division radiologist for the Rock Island Railway; died off the coast of Acapulco, Mexico, January 15, aged 68, of coronary occlusion.

Robert James Hutchinson ⊕ Grand Rapids, Mich.; Detroit College of Medicine, 1896; fellow of the American College of Surgeons; affiliated with the Blodgett Memorial Hospital, St. Mary's Hospital and Butterworth Hospital, where he died January 8, aged 77, of glomerular nephritis and hypertension.

Victor Eugene Kaufman, Canton, Ohio; Starling-Ohio Medical College, Columbus, 1912; died January 9, aged 67, of coronary embolism.

Joseph Henry Kerrigan ⊕ Manchester-by-the-Sea, Mass.; Tufts College Medical School, Boston, 1907; a member of the board of health in Stoneham and the school committee; served during World War I; past president of the Middlesex East District Medical Society; on the staff of the Choate Memorial Hospital, Woburn, and on the associate staff of the Winchester (Mass.) Hospital; died in Miami, Fla, January 3, aged 61, of heart disease.

Thomas Otis Klingner, Springfield, Mo.; Missouri Medical College, St. Louis, 1898; member of the American Medical Association and of the American Academy of Ophthalmology and Otolaryngology; specialist certified by the American Board of Ophthalmology; on the staffs of the Louise G. Wallace Hospital, Lebanon, Springfield Baptist Hospital, St. John's Hospital, City Hospital and the Burge Hospital, where he died January 7, aged 72, of carcinoma.

Sylvester Maxwell Lambert ⊕ Walnut Creek, Calif.; Syracuse University College of Medicine, 1908; an Associate Fellow of the American Medical Association; served for many years in the South Sea Islands with the International Health Division of the Rockefeller Foundation; author of "A Yankee Doctor in Paradise" died January 10, aged 64, of heart disease.

Harold Arthur Morris, Brooklyn; Long Island College Hospital, Brooklyn, 1907; member of the American Medical Association; fellow of the American College of Surgeons; affiliated with the Swedish Hospital in Brooklyn and the Harlem Valley State Hospital in Wingdale; died January 17, aged 62, of cerebral thrombosis.

Joseph Andrew Novelli ⊕ Brooklyn; Fordham University School of Medicine, New York, 1918; on the staff of the Evangelical Deaconess Hospital, where he died January 14, aged 53, of coronary thrombosis.

Julius E. Pinguely, Melbourne, Ky.; Medical College of Ohio, Cincinnati, 1888; member of the American Medical Association; died in the Speer Memorial Hospital, Dayton, January 16, aged 88, of gastric hemorrhage.

Rosa Caldwell Turnbull Powell, Grants Pass, Ore.; Cleveland Homeopathic Medical College, 1904; member of the American Medical Association; died January 6, aged 74, of heart disease.

William Lightfoot Powell, Palmyra, Ill.; Bennett Medical College, Chicago, 1897; died in the Macoupin Hospital, Carlinville, Dec. 25, 1946, aged 86, of cerebral hemorrhage.

George S. Price, Fairport, N. Y.; Eclectic Medical Institute, Cincinnati, 1892; member of the American Medical Association; served during World War I; formerly county coroner, health officer of Fairport and secretary of the board of health; at one time treasurer of the New York State Health Officers Association; served on the staff of the Genesee Hospital, Rochester, N. Y.; died January 18, aged 78, of cerebral hemorrhage.

Michael Leo Ravitch, New York; University of Moscow Faculty of Medicine, Russia, 1889; Central Medical College of St. Joseph, Mo., 1895; consulting dermatologist to Camp Zachary Taylor, Ky., during World War I; formerly on the staffs of the Michael Reese Hospital, Chicago, and the Eastern Kentucky Insane Asylum and Jewish Hospital in Louisville, Ky.; author of "Romance of Russian Medicine" died January 11, aged 79, of coronary thrombosis.

Mark S. Reuben, New York; Columbia University College of Physicians and Surgeons, New York, 1906; at one time assistant and associate in pediatrics at his alma mater; formerly chief of clinic, pediatric department of Vanderbilt Clinic; served as associate in pediatrics and visiting pediatrician at the Beth Israel Hospital; died January 15, aged 63, of coronary sclerosis and pernicious anemia.

David Robins ⊕ Newark, N. J.; University and Bellevue Hospital Medical College, New York, 1905; for many years an examining physician for the health department and the board of education; member of the staff of the City Hospital; died in the Newark Beth Israel Hospital January 16, aged 61, of sarcoma.

William Nicholas Senn, Chicago; Rush Medical College, Chicago, 1900; member of the American Medical Association; served during the Spanish-American War and World War I; at one time on the faculty of his alma mater; on the staffs of the Presbyterian and St. Joseph's hospitals; died in Wesley Memorial Hospital January 2, aged 70, of bronchopneumonia and arteriosclerosis.

Adelard Simard, Saginaw, Mich.; M.B., School of Medicine and Surgery of Montreal, Faculty of Medicine of the University of Laval at Montreal, 1905 and M.D. in 1906; died Dec. 6, 1946, aged 79.

Claude Adams Stearns ⊕ Alto Pass, Ill.; Barnes Medical College, St. Louis, 1911; died in Anna, Dec. 2, 1946, aged 61, of pneumonia.

George Brinton Sturgeon, Orwell, Ohio; Homeopathic Hospital College, Cleveland, 1892; died Dec. 1, 1946, aged 81, of cerebral embolism.

Joseph Thompson, Cleveland; University of Wooster Medical Department, Cleveland, 1906; member of the American Medical Association; affiliated with St. Ann's Maternity Hospital; died in Hershey, Pa., Dec. 22, 1946, aged 61, of coronary thrombosis.

Olga C. Thoren, Chicago; Bennett Medical College, Chicago, 1900; died January 13, aged 74, of carcinoma of the stomach.

W. E. Ticen, Mooreland, Ind.; Indiana Medical College, School of Medicine of Purdue University, Indianapolis, 1906; affiliated with the Henry County Hospital in New Castle; died January 4, aged 71, of coronary thrombosis.

George Connor Trawick, Chesterfield, Mo.; Vanderbilt University School of Medicine, Nashville, Tenn., 1899; local medical director of the Equitable Life Assurance Society of the United States; died in Jefferson Barracks, Mo., Dec. 7, 1946, aged 67, of heart disease.

Carden Frederick Warner ⊕ Washington, D. C.; Hahnemann Medical College and Hospital of Philadelphia, 1904; served on the staff of the National Homeopathic Hospital; died Dec. 5, 1946, aged 64, of coronary thrombosis.

George S. Wells, Santa Barbara, Calif.; Pulte Medical College, Homeopathic, Cincinnati, 1891; fellow of the American College of Surgeons; died Dec. 3, 1946, aged 83, of dissecting aneurysm of the abdominal aorta.

Fred Donnell West, Beaumont, Calif.; Ohio Medical University, Columbus, 1903; member of the American Medical Association; died Nov. 24, 1946, aged 69.

Abraham E. White, Philadelphia; University of Pennsylvania Department of Medicine, Philadelphia, 1890; died Dec. 29, 1946, aged 86, of heart disease due to carcinoma of the prostate.

Charles M. White, Clinton, Ind.; Jefferson Medical College of Philadelphia, 1876; member of the American Medical Association; at one time mayor of Clinton; on the staff of the Vermillion County Hospital, where he died January 2, aged 93, of senility.

Joel Govan Williams, Norway, S. C.; Baltimore Medical College, 1890; died Dec. 12, 1946, aged 85, of heart disease.

John Williams Wilson, Monticello, Miss.; Medical Department of Tulane University of Louisiana, New Orleans, 1909; member of the American Medical Association; served during World War I; died in the Mississippi Baptist Hospital, Jackson, Dec. 8, 1946, aged 61, of carcinoma of the stomach and liver.

Calvin Homer Wyker ⊕ Columbus, Ohio; Starling-Ohio Medical College, Columbus, 1909; on the staff of the Grant Hospital; died Dec. 23, 1946, aged 63, of metastatic epithelioma.

Eugene L. Youngue, Lakin, W. Va.; Leonard Medical School, Raleigh, N. C., 1908; medical superintendent of the Lakin State Hospital; died Dec. 24, 1946, aged 61, of coronary heart disease.

DIED WHILE IN MILITARY SERVICE

Arnold Breckenridge ⊕ Lieutenant M. C., U. S. Navy, Chapel Hill, N. C.; McGill University Faculty of Medicine, Montreal, Que., Canada, 1942; interned at St. Mary's and Naval hospitals in San Francisco; began active duty as a lieutenant (jg) in the medical corps of the U. S. Navy in 1943; promoted to lieutenant; a flight surgeon; died in Santa Ana, Calif., May 3, 1945, aged 29, in an explosion and crash of naval aircraft.

Ralph Edward Costanzo, Stamford, Conn.; Bennett Medical College, Chicago, 1914; member of the American Medical Association; served overseas during World War I; began active duty as a captain in the medical reserve corps of the U. S. Army in April 1941; assigned to Fort H. G. Wright, N. Y., where he was promoted to the rank of major and appointed post surgeon; died in the Stamford Hospital Dec. 26, 1946, aged 59, of coronary occlusion while on leave.

Howard Earling, Seattle; McGill University Faculty of Medicine, Montreal, Que., Canada, 1940; interned at the Charity Hospital in New Orleans and the Seattle General Hospital; began active duty as a lieutenant (jg) in the medical corps of the U. S. Naval Reserve on Dec. 21, 1942; promoted to lieutenant and lieutenant commander; died April 21, 1946, aged 42, of a malignant tumor.

Frederic Reid Fenno, Syracuse, N. Y.; Syracuse University College of Medicine, 1938; interned at the Boston City Hospital; began active duty as a first lieutenant in the medical reserve corps of the U. S. Army in February 1941; promoted to captain; served in this country, Africa, Italy and Burma; died in Bermuda July 20, 1945, aged 30, of acute hepatitis.

William Robert Galbreath ⊕ Bloomsburg, Pa.; University of Nebraska College of Medicine, Omaha, 1916; fellow of the American College of Surgeons; formerly resident physician at the Presbyterian Hospital in San Juan, P. R.; served during World War I; began active duty as a lieutenant colonel in the medical corps, Army of the United States, in July 1942 and, chief of the surgical service at the Station Hospital in Fort Eustis, Va.; later became commanding officer of the Station Hospital at Camp Patrick Henry, Hampton Roads; promoted to colonel; received a certificate of commendation for his services at Camp Patrick Henry; died in the Valley Forge General Hospital, Phoenixville, Nov. 3, 1946, aged 61, of myocardial infarction while on terminal leave.

Julius Robert Kaufman, St. Louis; St. Louis University School of Medicine, 1931; member of the American Medical Association; interned at St. Louis City Hospital; began active duty as a captain in the medical corps, Army of the United States, in July 1942; died in the Oakland (Calif.) Regional Hospital July 14, 1946, aged 39, of hernia.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Feb. 1, 1947.

British Association Decides to Negotiate With the Minister of Health

As anticipated in the preceding letter, the representative meeting of the British Medical Association has decided to negotiate with the government in regard to the National Health Service, in accordance with the recommendation of the council. In moving a resolution to this effect Dr. Dain, chairman of the council, said that this alteration of the council's first recommendation (to refuse to negotiate) did not mean any weakening in its policy of opposition to the act as it stands. In no sense was it a climb down. It was obvious that the letters of the presidents of the Royal Colleges, the plebiscite and the council's strong recommendation not to negotiate had produced in the minister of health a more conciliatory attitude than he had hitherto shown. His weakening on the question of a basic salary was helpful. The council proposed to discuss the conditions of a complete health service comprehensively and not to be bound by the terms of the act. If the minister refused to negotiate, no harm had been done and the association had the opportunity of putting itself right with the public.

Much opposition to the proposal to negotiate was made in the discussion which followed. It was argued that the act violated the principles set out by the council as fundamental. On the other hand, it was argued that the majority against negotiation obtained in the plebiscite was not great and that diplomacy rather than brute force was indicated. The amendment not to negotiate was defeated by a large majority. Lord Horder then moved an amendment "that the association confirms the already expressed policy in that it is anxious and willing to cooperate with the government in evolving the best possible health service for the country and realizes that this cooperation will require some new legislation." He held it to be vital that the minister should be aware from the first of the necessity for some fresh legislation. This amendment also was lost by a large majority. A vote was taken on the resolution of the council to negotiate, and this was carried by a majority of 252 to 17.

A New Safety Code for Anesthetic Apparatus

The Medical Defense Union, which has had to deal with many legal actions following the fatal administration of anesthetics, recently arranged a conference to discuss methods of minimizing errors in the use and assembly of anesthetic apparatus. A committee was formed consisting of representatives of the union, the Association of Anesthetists and the manufacturers of anesthetic apparatus and gases. The committee has put forward both a short term and a long term policy. The former includes plans for the distinctive marking of cylinders and pipes, planned storage, and the selection and instruction of personnel. The long term policy calls for a complete system of noninterchangeable connections for gas apparatus, which will make wrongful coupling impossible. But this will require the introduction and universal use of a new type of cylinder valve, with consequent changes of the apparatus attached to the cylinders. Until such time as this foolproofing can be done, the risk of a wrong connection must remain, but a code has been formulated which should reduce the risk to a minimum.

A British Standard Code of Practice has been prepared under the authority of the Chemical Engineering Divisional Council in response to the joint request of the Medical Defense Union and the Association of Anesthetists. This code lays down a color scheme for cylinders used for anesthetic gases, oxygen therapy and other medical purposes. Thus for a cylinder containing carbon dioxide for inhalation the upper three fourths is sea green and the lower fourth black; for making snow the cylinder is sea green throughout. For cyclopropane the color of the cylinder is aluminum, for ethylene mauve, for helium brown, for nitrous oxide black, and for oxygen black with a white shoulder. It is also recommended that no cylinder should be encased in any covering; that the encircling label should be in the characteristic color with the name of the gas. The visible connecting tubing should also bear the identification color.

OSLO

(From a Special Correspondent)

Jan. 8, 1947.

Is Pleurisy with Effusion an Indication for Artificial Pneumothorax?

Two studies undertaken in different hospitals in Norway suggest that the answer to this question is still to a certain extent in dispute. Drs. Anton Jervell and Boye Istre of the Vestfold Hospital have undertaken a follow-up study of 143 cases of primary exudative pleurisy after an observation period of one to five years and with a subsequent tuberculosis morbidity of 7.7 per cent. A close analysis of the 11 patients developing pulmonary tuberculosis showed that in only 3 of them would pneumothorax treatment possibly have been of value. So they have little to say in favor of it. But Dr. P. Agnar Nilsen of the Drammen City Hospital has reexamined 138 patients with a history of primary exudative pleurisy and has come to the conclusion that pneumothorax treatment is indicated when pulmonary infiltration is demonstrable on the pleurisy side or when the sputum contains tubercle bacilli and there is no demonstrable pulmonary infiltration in the side opposite the pleurisy. His routine treatment of primary exudative pleurisy is replacement of the fluid by air under atmospheric pressure, but only on one occasion.

The Salaries of Junior Hospital Doctors

In the past the competition for hospital internships, including appointments for several years, has been so keen that hospital boards have secured these services cheaply. For that matter competition is still pretty keen in the larger hospitals. But now a coordinated movement for better pay of juniors is being sponsored by the Norwegian Medical Association, which marks with an asterisk those advertisements of hospital appointments to which an inadequate salary is attached. This asterisk tells a prospective applicant to stipulate that he will not accept the appointment unless the Norwegian Medical Association approves of it. The *Journal of the Norwegian Medical Association* frankly charges several hospital boards with sabotage in connection with the claims of juniors to a revision of their salaries.

The Prognosis for Acute Nephritis

Dr. Ruth Ramberg of the Drammen City Hospital has undertaken a follow-up study of 175 patients treated for acute nephritis in this hospital in the period 1935-1944. Ten of these patients died while still in hospital and 4 after discharge. As many as 148 subsequently underwent ophthalmoscopy and measurement of the blood pressure, the sedimentation rate and urea clearance. The urine was also carefully examined. It was found that 108 could be considered cured, while 29 were not cured and 11 had suffered from relapse. It would seem that a considerable degree of proteinuria and definite edema are signs of bad omen. As high a proportion as 89 per cent in the "cured" group had undergone some acute infectious disease before the onset of signs of nephritis.

MEXICO

(From a Special Correspondent)

Nov. 2, 1946.

Congress on Brucellosis

The first Inter-American Brucellosis Congress in Mexico City from Oct. 28 to Nov. 2, 1946 was attended by delegates from most of the American countries. Over sixty papers were presented, covering various subjects:

EPIDEMIOLOGY

A considerable diffusion of brucellosis throughout the continent has occurred during the last few years. Evans, Jordan, Schmidt and Campbell showed that the increment of human cases was due not only to better means of diagnosis but to a real increase in the occurrence of the infection. Huddleson pointed out that after the attempt to suppress bovine brucellosis in the United States through radical measures, the infection is again as extensive as before and consequently the chances of transmission to man as high as ever. Furthermore, to the bovine strains which produced the majority of human cases in the past must be added cases due to the suis and melitensis types of infection. Pasteurization of milk obviously has not been sufficient to stop brucellosis; therefore other sources of infection must be taken into account. Direct contact with infected animals is a source of infection. Man to man infection has to be taken into consideration. Evans advanced the opinion that the great adaptability of Brucella may bring about at any moment "canine strains" and even "human strains." If this occurs the epidemiology of the disease may become greatly complicated. Argentine delegates (Molinelli and his associates, Criscuolo) presented reports from which it appears that the distribution of the three types of Brucella is conditioned by that of cattle, goats and hogs. In the province of Cordoba, one of the important foci of the infection, Brucella melitensis has been found to be prevalent. It appears from the work of Purriel and his collaborators that in Uruguay infection by Brucella abortus is predominant. A similar situation has been found in Brazil by Pacheco. The cases reported from Colombia are mainly due to Brucella melitensis, which was also the cause of the infection in the few cases reported from Central America (Menendez). In Puerto Rico and Cuba (Pomales-Lebron and Martinez de la Cruz) the prevalent variety is Brucella abortus. Ortiz-Meriotte, Angelini and other Mexican epidemiologists presented brucellosis as growing into a serious public health problem. The northern and central states show considerable incidence. Surveys by means of skin tests have shown percentages ranging from 25 to 45 reacting to the antigen. According to Castañeda Brucella melitensis has been found prevalent. The disease in the city of Mexico was related to the consumption of goat's cheese, butter and cream, which are prepared from unpasteurized milk. Epidemics of brucellosis have been reported in the state of Jalisco, where raw cow's milk is consumed. It seems that the caprine organism has been adapted to bovines.

BACTERIOLOGY

Molinelli, Ithurrat and their collaborators described methods of isolation and identification of the infecting agent. They obtain better percentages of isolation by collecting the blood in citrate and then seeding in liver infusion agar with or without carbon dioxide. They recommend shaking the flasks daily. Brucella may be detected from the fourth day on. Huddleson presented studies on a new medium for isolating and growing Brucella. The organisms grow better if the medium is shaken in order to have a constant interchange of fluid and gases. It has been found that Brucella abortus for isolation requires a reduced oxygen tension (5 per cent) as well as an increased carbon dioxide (10 per cent) tension.

LABORATORY DIAGNOSIS

Various speakers indicated that the agglutination test continues to be the most useful procedure in the diagnosis of active brucellosis. The blood culture is not yet a method which can be employed outside well equipped laboratories, and the allergic and opsonic tests are of difficult interpretation. The rapid agglutination test developed by Huddleson continues to be in the favor of most physicians, while the tube test remains restricted to well equipped laboratories. The bedside test recommended by Castañeda is a screen test which may be useful in zones where no laboratory facilities exist.

The general opinion was that we lack a reliable method of detecting chronic brucellosis. Some authors rely on the skin test with the reservation that it should be restricted to cases in which clinical evidence points to a possible Brucella cause. D'Antoni stated that a "therapeutic test" which he developed has been useful for patients with intestinal brucellosis. The test consists in the administration of M. B. P. vaccine at intervals of five days, with increasing doses. Possible reactions include severe malaise, fever and flaring up of the intestinal manifestations. Schmidt, Harris and Ithurrat suggested that complement fixation might solve the problem of diagnosis.

ALLERGY

Leon, Criscuolo, Molinelli and his associates and Maldonado-Allende recommended the skin test for detecting skin allergy. Some delegates warned against the possibility of misleading reactions in persons with past contact with Brucella material. Leon stated that it is possible to detect the type of the infecting Brucella by using simultaneously melitensis and abortus antigens. Clinical papers by Maldonado-Allende, Morones and Guerroro-Ibarra described the appearance of skin manifestations related to Brucella allergy. Major allergic disturbances such as nasal and bronchial asthma and migraine were reported by Villafañe-Lastra, which were readily relieved by specific vaccine therapy.

CLINICAL PICTURE

A majority of the delegates were inclined to consider brucellosis a disease with an initial acute phase followed by a chronic phase. Variants of this general type are the acute disease not followed by the chronic stage and the chronic disease of Evans's type. Goobar advanced the opinion that the infection remains in the organism for the remainder of the life of the individual. Therefore it must be considered as a chronic disease with acute or subacute episodes which may appear at the beginning or in later stages of the infection. Brucella melitensis, which prevails in Argentina and Mexico, takes a severe course and is followed by a large variety of complications. Villafañe-Lastra, Goobar, Maldonado-Allende and Molinelli reported that, besides the well known symptomatology of acute brucellosis, there is a high incidence of bone complications and spondylitis. Guerroro-Ibarra presented a study of 800 cases of melitensis infection in Mexico City with symptoms closely conforming to the typical picture described by Hughes in 1897. Certain manifestations such as painful localizations near the sacroiliac joint have been common in Mexico. Villafañe-Lastra, Goobar and Guerroro-Ibarra emphasized the high incidence of nervous manifestations in brucellosis, such as meningomyelitis, meningitis, neuritis, blindness through lesions of the optic nerves and paralysis of various regions due to neuritis or central lesions. Mental disturbances were considered to be quite frequent.

SPONDYLITIS

Villafañe-Lastra, Di Rienzo, Maldonado-Allende and others reported experience illustrating various types of vertebral lesions observed. In several cases the observation was completed by necropsy. Di Rienzo has followed his patients year after year, and the comparison of x-ray films taken at various stages of the disease give, among other findings, information concerning the early lesions, the manner in which Brucella destroys the vertebral body or the disks and the process of healing that is characteristic of brucellosis. Both Villafañe-Lastra and Di Rienzo emphasized the importance of the lesions of the intervertebral disks, which may become herniated and protrude either into the spinal canal or into the destroyed vertebral body.

RADIOLOGY

Di Rienzo recommended x-ray examination of all brucellosis patients regardless of actual symptomatology, since vertebral lesions may be detected at the earliest stages of the localization. Furthermore, the multiplicity of the bone lesions and the frequency of localizations in the lungs, circulatory system and joints require a systematic radiologic exploration. The exploration of the teeth was discussed by Martinez, who finds it necessary to perform careful x-ray examinations and remove all defective or infected teeth.

HEMATOLOGY

Sanchez-Yllades reported blood and bone marrow studies on 104 patients with acute brucellosis. He finds moderate anemia and normal white blood cell and lymphocyte counts and lower percentages of neutrophils. The bone marrow showed slight lymphocytosis and lower percentages of granulocytes. Gonzalez-Guzman studied 50 cases of acute and subacute brucellosis, finding a shift to the left of Arneth's index of lymphoid cells, decrease of lymphocytes with azurophilic granules and increase of the nucleolar richness, expressed by the Rn index corresponding to a greater youth of the lymphoid cells in the blood stream. Hematologic studies presented by Villafañe-Lastra indicate that there is relative or absolute increase in lymphocytes with decrease in polymorphonuclears. In a high percentage of the patients the total number of leukocytes has been lower than normal.

PATHOGENESIS

Castañeda discussed the pathogenesis of brucellosis, considering the intracellular growth of Brucella. He followed the organism through the stages of the acute experimental infection, finding it within macrophages, fibroblasts, endothelial and reticular cells, interstitial cells of the testis, alveolar cells and others. A cell to cell propagation of the infection was considered a possible explanation for the survival of the organism in spite of the high degree of immunity of the host. The constant discharge of antigenic material may be responsible for the general and local reactions observed in subacute and chronic brucellosis. The intracellular position of Brucella would prevent the action of antibodies and chemotherapeutic agents. This manner of understanding the pathogenesis would explain most of the symptoms and complications observed in brucellosis.

PATHOLOGY

Mazza reported that the main lesions found in men were in the spleen, where the lesions consist of hyperemia, hyperplasia and epithelioid hypertrophy of the splenocytes are so frequently seen that the author considers them characteristic of brucellosis. In the liver he finds fatty degeneration; the Kupffer cells are hypertrophic, and their phagocytic properties are increased. The kidney shows glomerulonephritis. Nyka, who works with Castañeda, found that guinea pigs inoculated intratesticularly developed panorchitis with an initial proliferating and a terminal suppurating stage. In mice inoculated intranasally, interstitial pneumonia developed, killing some of the animals in forty-eight hours. The spleen, liver, kidneys and brain showed inflammatory lesions of nodular type or foci of necrosis. Some of the pathologic aspects in experimental brucellosis were similar to those found in man by Mazza and himself. Nyka records 3 cases of fatal subacute brucellosis by Brucella melitensis, and all 3 showed considerable damage in the kidneys, spleen and liver. The main interest in Nyka's paper is the demonstration of the correlation of Brucella with the lesions and the constancy of the intracellular growth of the organism. However, in some necrotic spots Brucella was found extracellularly.

THERAPY

Several speakers have used successfully vaccine prepared with Brucella abortus in the treatment of subacute and chronic cases. Moss used detoxified vaccines, while other authors applied small doses of the bacterial suspensions with the main purpose of desensitizing the patients rather than increasing the immunity. Carrillo-Cardenas reported the results of eight years' experience in Castañeda's service at the Mexico General Hospital, using M. B. P. as a desensitizing agent. A group of 600 cases were reported cured by this method; in 30 cases the treatment was of little or no help, and there were 10 fatal cases having persistent bacteremia and severe complications. Information gathered from various physicians using M. B. P. in Mexico and in the United States indicates that desensitization relieves the patients.

D'Antoni reported satisfactory results in desensitizing patients suffering from intestinal brucellosis (a form of the chronic infection). He used M. B. P. (soluble antigen prepared from Brucella). Cases of amebiasis occurring in persons afflicted with chronic brucellosis were prompt and permanently cured by the combined treatment of amebiasis and brucellosis.

Considering the intracellular life of Brucella, Castañeda stated that in the subacute and chronic phases of the disease all one may expect at present is to reduce the hypersensitivity of the patients, modifying the course of the disease by lowering the intensity of the general and local reactions. In his experience most complications are prevented by systematic elimination of foci of secondary infection.

BLOOD THERAPY

Mena-Brito warned against the use of so-called immune transfusions, since Brucella may be found in the blood of apparently immune donors. He has observed shock in patients after immune blood transfusion or intravenous plasma therapy. However, Videla considers immune plasma useful in the treatment of his patients.

CONTROL OF BRUCELLOSIS

Epidemiologists from the most seriously affected zones of Mexico supplied information concerning plans for the organization of a campaign for the control of Brucellosis appropriate to each region, since general regulations have failed. Goobar and Oulton presented a plan for a large scale campaign in the province of Cordoba, Argentina. The plan is based in the organization of special boards for the direction of the campaign, vaccination with suitable vaccines and segregation of positive reactors. These recommendations would be enacted into law regulating the transportation of cattle, sanitary certification of breeders and other measures aiming at promoting the maintenance of healthy herds; tax exemption to encourage pasteurization plants, clinical examination of animals, and so on. Finally, the sale of unpasteurized dairy products is prohibited.

Most delegates agreed that a wide educational campaign, particularly among persons living in contact with goats and hogs, is highly necessary. It became apparent that we are far from a good plan for the control of brucellosis in animals.

Huddleson suggested that vaccination as a widespread measure should be held up until a suitable vaccine is developed that will immunize adult animals. Such a vaccine should be effective without causing blood changes that will confuse the diagnosis of the disease. He discussed experiments carried out in Michigan, where vaccination with one of the "mucoid" phases of Brucella suis appears to check the spread of the disease in susceptible animals in recently infected herds of cattle. Many reacting animals that are treated with the vaccine become negative to the agglutination test. The vaccine does not cause the development of a high serum agglutination titer. The noninfected animals become negative to the agglutination in from sixty to ninety days after treatment.

Correspondence

CANCER TREATMENT BY AUTOVACCINATION

To the Editor:—In the editorial comment on "Cancer Treatment from Russia" in the January 11 issue of The Journal you stated that according to a release (*U. S. S. R. Information Bull.* **6**:12 [Oct. 23] 1946) from the Russian embassy a method of autoinoculation of human cancer was used by Krasheninnikov with promising results and that this method was based on observations made by Besredka.

The Russian author undoubtedly referred to the work which I did with Besredka at the Pasteur Institute in Paris (Besredka, A., and Gross, L.: *Ann. Inst. Pasteur* **55**:402, 491, 1935; **57**: 343, 1936; **60**:5, 465, 1938; **62**:253, 1939). In these studies we observed that the intradermal implantation of an appropriate dose of tumor cell suspensions into susceptible animals results in the development of cutaneous tumors that may spontaneously regress. The spontaneous regression of such intradermal tumors is accompanied with the establishment of an active immunity directed specifically against the particular tumor which was used for the inoculation. Such spontaneous regression of the implanted tumors with the resulting immunity readily occurs in the case of certain tumors such as the Brown-Pierce epithelioma in rabbits, but this occurs with less frequency in the case of other neoplasms, such as certain sarcomas in mice and chickens.

In any event, only preventive immunization was possible. The question immediately arose in our minds, however, whether a similar immunity could not be produced in animals that already had tumors—that means whether a therapy of tumors could not be attempted by autovaccination. Accordingly, a series of experiments was performed for the purpose of determining an answer to this question. It can be stated briefly that all these experiments gave negative results and that in no case an animal that already was carrying a tumor could be immunized by means of the intradermal method against its own neoplasm.

Our experiments were not limited to animals; in a few cases we also inoculated patients that had tumors with their own neoplasms. The experiments on human beings were of course limited to persons who already had metastatic tumors so as not to endanger them by these studies (*Cancer Research* **4**:293, 1944). In these few instances in which we inoculated human beings with their own tumors it was found that the implants appeared within several weeks after the intradermal inoculation and that these implants then grew rapidly so that they had to be promptly removed. There was no evidence whatever of any spontaneous regression of either these implants or the primary neoplasms.

Similar experiments were also made by the French surgeon T. de Martel (*Bull. et mém Soc. nat. de chir.* **60**:1390, 1934), who transplanted carcinoma of the breast in 3 patients and carcinoma of the bowel in 1 patient under the skin of the abdomen and each into the patient in whom it had originated. A latent period of approximately five months was observed in all 4 instances; after that time had elapsed, however, the implants began to grow very rapidly so that they had to be destroyed by x-rays. No evidence of a spontaneous regression of either the implanted tumors or the primary neoplasms could be observed in these cases.

We have performed additional studies on animals along this line, and there appears little doubt, if any, that under the present conditions of experiments an autoinoculation of a tumor may only lead to the establishment of an artificial metastasis. For that reason the news on the autovaccination experiments of Krasheninnikov should be regarded with criticism. Experiments thus far performed appear to indicate that autoinoculation of untreated cancerous tissue in man, be it wrapped in a piece of omentum (as the Russian author suggests) or not, be it into or under the skin, is highly dangerous. The result can only be the artificial creation of a progressively growing metastatic tumor.

Ludwik Gross, M.D., New York.

USE OF AMPHETAMINE SULFATE IN MANAGEMENT OF OBESITY

To the Editor:—Dr. S. Charles Freed deserves a great deal of praise for his intelligent and practical approach to the treatment of obesity.

There has been considerable criticism relative to the use of amphetamine sulfate for this purpose because of unpleasant side reactions, toxic manifestations and the possibility of addiction. Also there are some who feel that it is useless with respect to controlling appetite.

I agree with Dr. Freed and wish to emphasize the value of amphetamine sulfate in managing obesity in children. Over a number of years I have experienced no serious untoward reactions or addiction in several hundred cases. In my original report (Experience with Benzedrine Sulfate in the Management of Obesity in Children, *J. Pediat.* **17**:490 [Oct.] 1940) no remarkable effects on basal metabolic rate, blood pressure and pulse rate were noted, and unpleasant reactions such as nervousness, insomnia and occasional abdominal pains can be controlled with barbiturates.

Recently Dr. Heinrich Necheles and I studied the effect and mechanisms of amphetamine sulfate on weight reduction (Studies on the Effect and Mechanism of Amphetamine Sulfate on Weight Reduction, *Am. J. M. Sc.* **205**:820 [June] 1943). We believe that the psychic effects of amphetamine plus depression of gastric hunger motility and of hunger can explain the ability to control appetite and food intake in the obese child.

There is no question that the psychogenic factor in obesity is of paramount importance. In the treatment of children in particular the problem of controlling appetite is extremely difficult. The will power is usually poor and adherence to a low caloric diet is difficult. In many hospitals and clinics psychiatric consultation is available and psychotherapy is practical at little or no expense to the patient. In private practice however the problem is different. Usually such treatment is not readily available or may be a financial burden on the family. Under such circumstances the family physician or pediatrician must practice his own psychotherapy to his best ability. Amphetamine sulfate is a valuable adjunct.

Ralph H. Kunstadter, M.D., Chicago.

PENICILLIN AS A BLOOD COAGULANT

To the Editor:—Supplementing my letter of January 24 regarding the effectiveness of penicillin as a blood coagulant, today I found in The Journal February 1, page 354, under Current Medical Literature, the review of an article published in the *Giornale di Medicina*, Palermo: "Fradà directs attention to the frequency of embolism of the large blood vessels occurring in the course of penicillin therapy in acute and subacute endocarditis. . . . The author believes that penicillin increases coagulability of the blood."

Mort D. Pelz, M.D., St. Louis.

CAUDAL ANESTHESIA

To the Editor:—My attention has been drawn to your editorial comment on caudal anesthesia in the January 25 issue of The Journal.

I recall the several favorable references on this form of obstetric relief that appeared in your columns shortly after Hingson and Edwards first announced their method. At that time I wrote a word of warning against the acceptance of the method as a safe procedure, calling attention to one maternal death in approximately every 1,600 cases, having occurred in 15,950 deliveries performed under this form of analgesia. Four of these deaths, one of which happened in their own hands, were included in the 10,000 case reports of Hingson and Edwards. In the same report they cited two fetal deaths attributed to the method. Also at that writing I mentioned two fetal disasters that occurred at our clinic at Indiana University.

During the past three years I have known of five additional maternal deaths, one of which occurred within the past year at one of the larger Chicago teaching centers. In this instance the administrator of the analgesia had had an experience of over 800 cases and therefore properly could have been considered an expert. Following this death the institution has discontinued the method.

With the resulting continued mortality I cannot refrain from once again raising a strong note against caudal anesthesia in obstetrics as a safe procedure.

The current editorial indicates the success of the method by referring to its low incidence of failure, 5.3 per cent. Although this percentage is comparable to that of other methods, it does not include the relatively high percentage of patients eliminated because of clinical and anatomic reasons.

While many of the advantages of caudal anesthesia can be highly stressed, emphasis should by no means be placed on its simplicity and safety.

C. O. McCormick, M.D., Indianapolis.

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

BOARDS OF MEDICAL EXAMINERS
BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Examinations of the boards of medical examiners and boards of examiners in the basic sciences were published in The Journal, Mar. 8, page 716.

NATIONAL BOARD OF MEDICAL EXAMINERS

National Board of Medical Examiners: *Parts I and II.* Various centers, March 17-19. *Part III.* Various centers, June. Durham, Oct. 21-23. Sec., Mr. Everett S. Elwood, 225 S. 15th St., Philadelphia 2.

EXAMINING BOARDS IN SPECIALTIES

American Board of Anesthesiology: *Oral.* Los Angeles, April 11-12. Sec., Dr. P. M. Wood, 745 Fifth Ave., New York.

American Board of Dermatology and Syphilology: *Oral.* New York City, April 25-27. Sec., Dr. George M. Lewis, 66 E. 66th St., New York 21.

American Board of Internal Medicine: *Written.* Chicago, March 17. *Oral.* Philadelphia, June 5-7. Final date for filing application is April 1. Asst. Sec., Dr. W. A. Werrell, 1 W. Main St., Madison 3, Wis.

American Board of Obstetrics and Gynecology: *Part II.* Pittsburgh. June 1-7. Sec., Dr. Paul Titus, 1015 Highland Bldg., Pittsburgh.

American Board of Otolaryngology: Chicago, Oct. 7-11. Sec., Dr. D. M. Lierle, University Hospitals, Iowa City, Ia.

American Board of Pathology: Philadelphia, June 3-4. Final date for filing application is April 15. Sec., Dr. Robert A. Moore, Euclid Ave. and Kings Highway, St. Louis 10.

American Board of Pediatrics: Effective May 1, application fee will be $125.

American Board of Radiology: Atlantic City, June 4-8. Final date for filing application is April 1. Sec., Dr. B. R. Kirklin, 102-110 Second Ave., S. W., Rochester.

American Board of Urology: Chicago, February. Final date for filing application is Nov. 1. Sec., Dr. G. J. Thomas, 1409 Willow St., Minneapolis 4.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Privileged Communications: Testimony of Consulting Physician.—This was an action to recover damages for personal injuries resulting from the alleged negligence of the defendant employer. After a verdict for the plaintiff, the defendant filed a motion for a new trial, which was heard by the U. S. district court, D., fifth division, Minnesota.

In arguing his motion, the defendant contended, among other things, that the trial court erred in rejecting certain testimony which he offered. It appeared that Dr. McHaffie, employed by the defendant, attended the plaintiff on his arrival at the hospital and during the period of his convalescence. Irrespective of the source of employment, said the court, the doctor attended the patient in a professional capacity, and the relation of physician and patient existed. The information obtained by Dr. McHaffie in that capacity was therefore privileged, if the patient desired to claim it, under section 9814(4), Mason's Minnesota Statutes 1927, which provides:

> A licensed physician or surgeon shall not, without the consent of his patient, be allowed to disclose any information or any opinion based thereon which he acquired in attending the patient in a professional capacity and which was necessary to enable him to act in that capacity. . . .

But Dr. McHaffie was called by the plaintiff as an adverse witness, said the district court, and the privilege as to him was thus waived so there was no question as to the admissibility of his testimony. Seven weeks after the accident, however, Dr. McHaffie and Dr. Dittrich called at plaintiff's home for an examination and consultation. The testimony of the latter was offered by the defendant and an objection thereto by the plaintiff sustained on the ground of the privilege. The defendant contended, on motion for a new trial, that the plaintiff waived his right to object to the testimony of Dr. Dittrich by waiving the privilege as to Dr. McHaffie.

The oral examination of Dr. Dittrich pertaining to the relationship of physician and patient revealed that Dr. Dittrich examined the plaintiff on Feb. 5, 1946 at the request of Dr. McHaffie for the purpose of advising about treatments for him; that the doctors discussed the matter and that Dr. Dittrich made some suggestions regarding the treatment and that he went there "just like you would go to any patient that you were called to take care of." Dr. McHaffie also called Dr. Haukom for consultation and to read x-ray films while the plaintiff was at the hospital, but his testimony was not offered at the trial. If these doctors were called for consultation and for advice in the treatment of the plaintiff, said the court, ordinarily they would not be permitted, over the objection of the patient, to divulge what they learned. The defendant argued, however, on the basis of a prior Minnesota case that an examination and treatment of a patient by two or more physicians or surgeons was an unitary affair and that, where the patient permits one of them, as his own witness, to testify as to the whole matter, privilege is waived. The district court noted, however, that the courts of many other jurisdictions have held that the privilege under the statute is not waived by permitting one of two or more attending physicians to testify on the theory that the privilege extends to the individual witness and not to the consultation or transaction in which the physician was engaged. Citing with approval a prior Idaho case the district court said that "the decided weight of authority is in favor of the view that a waiver of the privilege as to one physician does not waive the privilege as to any other physician. It is also very clear that our [Idaho] statute forbids and prohibits the examination of a physician without the consent of the patient, and this privilege extends to the individual witness and not to the consultation or transaction in which he was a physician. In other words, each individual physician is a witness within the meaning of this statute, rather than a number of physicians who may be present or participate in a consultation, being treated as one witness. . . ." On principle, said the district court, the basis of the rule is sound. A patient may attend a clinic or hospital to consult an individual physician. While there, other physicians, for the best of reasons, may be called into consultation. Possibly the one called is at the time the duly appointed physician of some person having interests adverse to that of the patient. The physician called for consultation should refuse either to serve or to violate the privilege resulting from the relation of physician and patient. After the examination has been made the privilege should be respected.

Accordingly, the court ruled that the plaintiff's privilege as to Dr. Dittrich had not been waived by allowing Dr. McHaffie to testify and that the motion for a new trial must be overruled.—*Tweith v. Duluth, M. & I. R. Ry. Co., 66 F. Supp. 427 (Minn., 1946).*

Medical Practice Acts: Chiropractic as Practice of Medicine.—The plaintiff, State Board of Medical Examiners of New Jersey, filed a complaint charging that the defendant practiced medicine in the state of New Jersey without first having obtained a license authorizing him so to do. The trial court, without a jury, held that the defendant did not practice medicine, from which judgment the plaintiff appealed to the supreme court of New Jersey.

The uncontradicted evidence showed that the defendant was licensed to practice chiropractic in Kentucky and Nevada but was not licensed to practice either medicine or chiropractic in New Jersey. He held himself out as a chiropractor and practiced accordingly, however. While engaged in such practice, the defendant was visited by two female investigators employed by the plaintiff board, each of whom complained of a "lame back," made arrangements with the defendant for a fixed period of treatments and paid him $15 on account. They also signed contracts which, among other things, emphasized that defendant did not, as a doctor, treat, operate or prescribe but, as a chiropractor, merely adjusted the spinal column. Under these contracts the defendant treated one witness eleven times and the other three times, during the course of which the defendant took x-rays of each witness, took neurocalometer readings of the neck and spine and gave each various chiropractic treatments.

The defendant contended that he did not practice medicine "in its true sense" within the meaning of the statutes but that what he did constituted the practice of chiropractic. The position taken by the defendant is without merit, said the court, for the defendant did not in fact practice chiropractic within the statutory definition of that term. The practice of chiropractic is defined as "the detecting and adjusting, by hand only, of vertebral subluxations." Clearly, the defendant's manner or method of treatment embraced extra instrumentalities. However desirable the use of such instruments may be, their use is not treatment by hand only. Moreover, continued the court, the statute provides that ". . . the practice of medicine . . . shall be deemed to include, inter alia, the practice of . . . chiropractic. . . . No argument to the contrary, however ingenious, can cloud the clear and explicit classifications into which the legislature placed the practice of chiropractic. The provisions which defendant allegedly violated are those which the legislature defined as constituting the practice of medicine and those which define a penalty for so practicing without a license. The reason for such statute is simply to make abundantly clear that the legislature intended to include the practice of chiropractic within the meaning of the practice of medicine as set forth in the statutes. Thus, the court concluded, whether, as claimed by defendant, one who practices chiropractic merely analyzes and adjusts the ailment, while one who practices medicine diagnoses and treats the ailment, the end result, apart from the play on words, is that each undertakes by his particular means or methods to relieve the patient from his ailment or disease. That is practicing medicine within the meaning of the statutes as charged.

Furthermore, the court continued, there is nothing in the proofs adduced and the law applicable thereto to support the defendant's claim that the inclusion of the practice of chiropractic within the meaning of the practice of medicine operated unreasonably to deny his asserted rights under the state and federal constitutions. In a prior Louisiana case which was affirmed by the Supreme Court of the United States it was held that "to practice chiropractic is to practice medicine" and that such holding did not violate the chiropractor's rights under the state constitution and under the federal constitution.

Accordingly, the court having determined that the trial judge erred as a matter of law in determining that the defendant had not illegally engaged in the practice of medicine, the judgment in favor of the defendant was reversed.—*State Board of Medical Examiners v. Grossman, 48 A. (2d) 700 (N. J., 1946).*

Medical Motion Pictures

NEW FILMS ADDED TO A. M. A. LIBRARY

The following medical motion pictures have been added to the American Medical Association library of films:

HYDROTHERAPY.

16 mm. Black and white. Sound.

Running time twenty-two minutes.

Film shows how to administer sedative baths (Nauheim and continuous flowing) and wet sheet packs; tonic showers, douches and sprays; special types of therapeutic baths; rehabilitation hydrotherapy in the Hubbard bath and rehabilitation pool, and the physiologic effects of hydrotherapy on the body.

RADIOTHERAPY: HIGH DOSAGE TREATMENT.

16 mm. Black and white. Sound.

Running time seventeen minutes.

Film explains the nature of x-rays, the varying degrees of penetration of low voltage and high voltage rays, and the effect of x-rays on human tissue and shows how the nurse technician prepares a patient and administers an x-ray treatment, and how radon seeds are sterilized and implanted in diseased tissue.

RECREATIONAL AND OCCUPATIONAL THERAPY.

16 mm. Black and white. Sound.

Running time thirteen minutes.

Film shows recreational and occupational activities fitted to the patient's condition; passive diversion during an immobile state following traumatic injury; limited physical activities carried on in bed; individualized occupational therapy as supervised by the nurse; group occupational work in hospital and community, and social recreation projects.

THERAPEUTIC USES OF HEAT AND COLD. PART I: ADMINISTERING HOT APPLICATIONS.

16 mm. Black and white. Sound.

Running time twenty-one minutes.

Film explains the nature of heat and shows how it is transferred by conduction, conversion and convection; explains body reactions to heat and the use of these reactions in the alleviation of pain; shows how to apply hot water bottles, electric pads, chemical pads and paraffin bath; how to use hot soak, compresses, infra-red lamp and short wave diathermy, and precautions which must be taken when applying heat.

THERAPEUTIC USES OF HEAT AND COLD. PART II. ADMINISTERING COLD APPLICATIONS.

16 mm. Black and white. Sound.

Running time twenty-two minutes.

Film shows the body's responses to cold stimuli and how these responses are used to alleviate pain; how to administer contrast baths and ice bags; how to apply ice packs as anesthesia, and how to use refrigerating blankets and cold chamber.

THE DIODE.

16 mm. Black and white. Sound.

Running time seventeen minutes.

Film explains the principles of electron flow across a gap; basic features of the diode tube; control of electron flow in the tube; photoelectric cells; x-ray tubes, and the diode as a rectifier.

THE TRIODE.

16 mm. Black and white. Sound.

Running time fourteen minutes.

Film reviews the diode principle; explains the electric field in a diode; electric field in a triode; a triode amplifier circuit; amplification of direct current voltage changes; amplification of alternating voltages; distortion; amplification of audio frequency signals, and reviews the triode principle.

These films, produced in 1945 by the Division of Visual Aids, U. S. Office of Education, are available on a loan basis from the American Medical Association to medical societies, medical schools, hospitals, and other scientific groups. The transportation charges (both ways) will be paid by the borrower. Requests should be submitted as far in advance as possible to the Secretary, Committee on Medical Motion Pictures, American Medical Association, 535 North Dearborn Street, Chicago 10.

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1937 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied with stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Practitioner, Philadelphia

1:113-168 (Nov.) 1946

Vitamin Deficiency Diseases in Infants. H. Bakwin.—p. 113.
Treatment of Peptic Ulcer, with Special Reference to Vagotomy. J. M. Ruffin and R. C. Smith.—p. 118.
Significance and Management of Obstructive Factor in Cardiac Asthma and Cardiac Dyspnea. H. E. Heyer.—p. 121.
Heart in Thyroid Disease. E. Rose.—p. 125.
Anuria. E. H. Barksdale.—p. 133.
Spontaneous Pleural Effusions. E. W. Custer and R. E. Evers.—p. 138.
Endemic Typhus Fever. J. L. Chestnut.—p. 141.
Diagnosis of Cerebral Aneurysms. B. J. Alpers.—p. 146.
Neurodermatitis. H. Alden and J. W. Jones.—p. 151.
Psychosomatic Diagnosis. E. Weiss.—p. 156.

Journal of Bacteriology, Baltimore

52:617-722 (Dec.) 1946. Partial Index

Application of Walker's Index of Functional Normality to Study of Developing Chick Embryos Infected with Levaditi Strain of Vaccinia. R. E. Hoffstadt and Helen B. Tripi.—p. 617.
Two New Amino Acid Fermenting Bacteria, Clostridium Propionicum and Diplococcus Glycinophilus. B. P. Cardon and H. A. Barker. —p. 629.
*Bactericidal Detergent for Eating Utensils. A. F. Guiteras and Rebecca L. Shapiro.—p. 635.
Amount of Enzyme Inactivation at Bacteriostatic and Bactericidal Concentrations of Disinfectants. Martha H. Roberts and O. Rahn.—p. 639.
Studies on Highly Soluble Azo Sulfonamides. C. A. Lawrence, H. Klingel and G. R. Goetchius.—p. 645.
Viability of Dried Skim Milk Cultures of Lactobacillus Bulgaricus as Affected by Temperature of Reconstitution. M. L. Speck and R. P. Myers.—p. 657.
Fatty Material in Bacteria and Fungi Revealed by Staining Dried, Fixed Slide Preparations. K. L. Burdon.—p. 665.
Disparity in Appearance of True Hansen's Bacilli and Cultured "Leprosy Bacilli" When Stained for Fat. K. L. Burdon.—p. 679.
*Comparative Action of Extract of Brain Tissue and Penicillin on Staphylococcus Aureus Infections. L. G. Nutini and Eva Maria Lynch. —p. 681.

Bactericidal Detergent for Eating Utensils.—Guiteras and Shapiro believe that an ideal dishwashing compound would be one that combines the detergent properties of the anion active agents with the bactericidal properties of the cation active. Since these two types of surface active agents are incompatible it is impossible to combine them, because they would neutralize each other. The purpose of this investigation was to develop a detergent suitable for washing and sanitizing eating utensils. It was found that when cation active agents are used as bactericides in detergent compositions it is essential that the detergent be emulsifying but not saponifying. If the alkalinity of the detergent is sufficiently high to saponify fat, the resulting soap will inactivate the cation active agent and render the solution completely ineffective germicidally.

Action of Brain Tissue Extract and Penicillin on Staphylococcic Infections.—Nutini and Lynch say that for a number of years their laboratories have investigated the effects on bacterial growth of certain substances obtained from plant and animal sources. Extracts of beef spleen, heart, kidney and brain were effective against Staphylococcus aureus infections. The mortality in experimental animals receiving S. aureus and the brain extract subcutaneously was 0.9 per cent in the prophylactic series of 223 animals and 3 per cent in the therapeutic series of 116 animals, mortality in the control series being respectively 75 and 87 per cent. The present paper is a report of the comparative value of brain extract and penicillin as therapeutic and prophylactic agents against S. aureus in vivo. From the evidence presented it is apparent that there is in brain tissue a factor that functions effectively against Staphylococcus aureus in vivo. Whether the extract is used as a prophylactic or therapeutic measure, it is superior to penicillin in the dosages used for Staphylococcus aureus infections in these experiments.

Maine Medical Association Journal, Portland

37:303-332 (Dec.) 1946

Psychogenesis of Bronchial Asthma. D. L. Kyer.—p. 303.
Progress in Handling Surgical Diseases of Colon. E. H. Risley.—p. 312.

New York State Journal of Medicine, New York

46:2687-2796 (Dec. 15) 1946

What Has Thiouracil Contributed to Management of Graves' Disease. R. W. Rawson and Janet W. McArthur.—p. 2733.
Exacerbations and Remissions of Symptoms in Posterior Fossa Tumors in Children. H. R. Merwarth.—p. 2742.
Treatment of Amenorrhea and Sterility by X-Ray Therapy. I. I. Kaplan.—p. 2746.
Effects of Demerol in Obstetrics. W. M. Mallia.—p. 2753.
*Surgical Treatment of Dysmenorrhea. C. J. Duncan.—p. 2757.

Surgical Treatment of Dysmenorrhea.—According to Duncan dysmenorrhea is divided into two main groups: the essential, unassociated with demonstrable pelvic disorder and the secondary, in which some organic reason for the pain can be found. Section of the superior hypogastric plexus has been employed in recent years for the essential cases with dramatic results. Whether the excision of the presacral nerve accomplishes its effect by interruption of the true sensory pathways or because of changes in the vascularity of the fundus is debatable. When limited to cases of true uterine colic or so-called miniature labor, adequate presacral resection gives most comforting results. Secondary dysmenorrhea in the younger group may be treated conservatively with a high expectation of secondary surgery. Secondary dysmenorrhea in the older group should be treated by total hysterectomy and bilateral salpingo-oophorectomy.

Northwest Medicine, Seattle

45:885-968 (Dec.) 1946

Penicillin in Neurosyphilis. E. C. Clark and W. J. Moershel.—p. 913.
Sulfonamide Therapy. J. W. Haviland.—p. 918.
Diagnosis of Hypoglycemia Neurosis with Minnesota Multiphasic Personality Inventory. T. W. Houk and Yvonne Robertson.—p. 923.
Intussusception Occurring After Intubation of Small Intestine: Report of Case. H. M. Nichols.—p. 924.
Jaundice: Evaluation of Diagnostic Methods. E. P. Lasher Jr.—p. 926.

Occupational Medicine, Chicago

2:285-420 (Oct.) 1946

Functions of Civilian Medical Division of War Department: Condensed Report, 1942-1946. F. C. Smith.—p. 285.
*Ragweed Dermatitis. B. J. Slater, J. L. Norris and N. Francis.—p. 298.
Research in Industrial Medicine in Great Britain at War. D. Hunter. —p. 301.
*Fibromyositis, Including Its Industrial Implications and Special Reference to Referred Pain. F. W. Slobe.—p. 329.
Control of Heat in Industry. W. Machle.—p. 350.
Suggested Plan for Preventive Medical Program in Federal Employees' Health Service.—p. 360.

Ragweed Dermatitis.—According to Slater and his associates the rash of ragweed dermatitis is usually distributed on the exposed surfaces of the body such as the face, neck, forearms, hands, legs and feet but may, like other forms of dermatitis venenata, involve the whole body. An important factor in the diagnosis is the seasonal incidence and recurrence. Symptoms usually appear in August and end with the frost, corresponding with the period of pollination of ragweed; however, the eruption may appear as early as May, when the ragweed plant begins to grow, and may continue well up to November, as the ragweed plant maintains its vitality up to that time. The best advice to give a patient who is afflicted with ragweed dermatitis is to go to a place where ragweed does not grow. If this is not possible, the treatment of choice is by oral desensitization, the ragweed oleoresin being used in corn oil.

Fibromyositis and Referred Pain.—Slobe asserts that ailments classed under the broad grouping of "fibromyositis" are among the commonest diseases of adults. They are neither confined nor peculiar to industry. Their industrial significance arises from the frequency of involvement among the age groups employed in industry, the frequency of actual or alleged asso ciation with strains, sprains, contusions, continued exertion and minor repetitive motions, the vast number of lost workdays and the huge amount of impaired efficiency caused by these ailments. The author defines fibromyositis as a localized (occasionally diffuse) area of infiltration. The causation is not known. Referred pain and tenderness are frequent manifestations and are likely to cause errors in diagnosis. Characteristics of referred pain from the four most frequent sites of origin are described, namely the dorsolumbar region, the lower part of the back, the shoulder girdle and upper dorsal region and the cervical region. Special emphasis is placed, on the diagnostic and therapeutic value of injections of procaine hydrochloride.

Oklahoma State Medical Assn. Jour., Oklahoma City

39:443-486 (Nov.) 1946

Erythema Multiforme with Unusual Manifestations. J. Stevenson.—p. 443.
Value of Anteroposterior Lordotic Film of Chest. J. R. Danstrom.—p. 445.
Fatigue States Associated with Endocrine Disorders. H. H. Turner.—p. 447.
Pioneer Users of X-Rays in Oklahoma. P. E. Russo.—p. 450.

39:487-542 (Dec.) 1946

Obstetrician's Responsibility to Newborn, with Especial Consideration of Asphyxia. R. E. Emanuel.—p. 489.
Perennial Nasal Allergy in Children. W. W. Arrendell.—p. 493.
Typhoid Vaccine for Induction of Fever in Neurosyphilis. P. Jones and J. H. Lamb.

Phillippine Medical Association Journal, Manila

22:287-312 (July) 1946

Report of First Case of Intestinal Heterophyidiasis Diagnosed in Life in Philippines. P. D. Gutierrex, A. A. Lozano and T. P. Pesigan.—p. 287.
Amebiasis in Children in City of Manila, with Report of 41 Cases. A. V. Tubas, A. P. Jongco, D. F. Dauis and J. O. Chan.—p. 293.
*Ascaris in Common Bile Duct: Report of 10 Cases. F. Guzman and P. Morales.—p. 299.

Ascaris of Common Bile Duct.—Guzman and Morales report 10 cases in which Ascaris was found in the common bile duct during operation. The history and symptoms were characteristic of a gallbladder disease. Since gallbladder disease was coexistent with the presence of Ascaris, the authors advance the hypothesis that a preexisting gallbladder disease attracts the parasite into the common bile duct or at least makes it possible for the wandering worms to penetrate into the biliary system by causing a dysfunction in the sphincter of Oddi which normally would impede such an entrance. In the presence of a gallbladder disease, the removal of the parasites alone will not cure the disease; the gallbladder may also have to be removed.

Public Health Reports, Washington, D. C.

61:1757-1796 (Dec. 6) 1946

Guide for Disposition of Persons with Abnormal Pulmonary Findings on X-Ray Films. H. F. Hilleboe and J. Holm.—p. 1759.
Variation with Age in Frequency of Tuberculous Pulmonary Calcification. R. H. High and H. B. Zwerling.—p. 1769.
*Calcifications in Spleen: Occurrence in Histoplasmin and Tuberculin Reactors. R. H. High.—p. 1782.
Rehabilitation. J. Galsworthy.—p. 1786.

61:1797-1832 (Dec. 13) 1946

Skin Reaction in Rabbits Produced by Intradermal Inoculation of Suspensions of Killed Pasteurella Tularensis. C. L. Larson.—p. 1797.
Duration of Toxicity of Several DDT Residual Sprays Under Conditions of Malaria Control Operations. F. L. Knowles and C. S. Smith.—p. 1806.
Potassium and Sodium Metaphosphates as Sources of Phosphorus for Animals. H. F. Fraser, E. R. Smith and W. C. White.—p. 1810.

Calcifications in Spleen in Histoplasmin and Tuberculin Reactors.—High says that, although it is recognized that calcifications of the spleen can be produced by phleboliths, parasitic infections, abscesses, arteriosclerotic plaques, perisplenitis, infarcts, hemorrhage and many other conditions, tuberculosis in the opinion of most authors, is by far the most frequent cause of such calcifications. Twenty instances of splenic calcification were observed as incidental findings in a survey conducted in Kansas City, Mo. Tuberculosis did not seem the most frequent cause of such calcifications. The frequency with which splenic calcifications were noted in histoplasmin reactors suggests that the agent producing the sensitivity to histoplasmin is frequently responsible.

Quart. Bull. of Sea View Hosp., Staten Island, N. Y.

8:187-278 (July) 1946

*False Acid Fast Bacilli: Fat-Coated Saprophytes in Wound Treated with Sulfathiazole Ointment. A. Berczeller and Grace Frank.—p. 187.
*Significance and Interpretation of "Doubtful" Congo Red Test. I. J. Selikoff.—p. 194.
*Revision Thoracoplasty: Study of 89 Cases. L. A. Hochberg, Ira Fink and A. Denize.—p. 205.
Diagnostic Bronchial Lavage. M. M. Bueno.—p. 212.
Streptomycin in Miliary Tuberculosis with Tuberculous Meningitis: Case Report with Autopsy Findings. P. K. Bornstein.—p. 219.
Insulin Tolerance Test in Controlled and Uncontrolled Diabetes Mellitus. S. London.—p. 228.
Infection with Bacillus Pyocyaneus (Pseudomonas Aeruginosa): Review of Literature and Case Report. E. H. Robitzek and G. Prausnitz.—p. 245.

False Acid Fast Bacilli.—Berczeller and Frank report observations from which they conclude that acid fast bacilli found in specimens originating from sites treated with fatty substances should be looked on critically. Acid fast bacilli found under these circumstances may only be fat coated gram positive or gram negative saprophytes. Before conclusive diagnosis is attempted by direct examination as to the presence of tubercle bacilli, fat (ointment) treatment should be discontinued for at least seven days. When a search for tubercle bacilli is made during this interval, the smears must be treated with fat solvents before staining.

Interpretation of "Doubtful" Congo Red Test.—Selikoff maintains that Bennhold's congo red test is of great value in the diagnosis of amyloidosis despite several limitations. He shows that the criticism of the "false positive" test is misdirected. The fault lies not with the test but with its interpretation. It has been customary to regard tests showing over 40 per cent absorption as positive. There is evidence that 40 to 89 per cent absorption is not at all diagnostic of amyloidosis. Most patients who show this result have no amyloid. Less than 90 per cent absorption in the congo red test should be considered as a negative result with the realization that, in a few cases showing this, amyloid will be present. Other means of diagnosis are necessary for these cases.

Revision Thoracoplasty.—Hochberg and his associates are concerned with 89 revision thoracoplasties, patients failing to have a conversion of the sputum within a reasonable period after the initial surgical procedure was completed and who were later subjected to revision of the original operation to enhance the collapse of the lung. The causes of failure in the original operation are operation over a pneumothorax, greatly thickened parietal pleura, anterior position of cavity and paravertebral thoracoplasty, pulmonary fibrosis, inappropriate surgery and giant and/or parahilar cavities. Approximately two thirds of the patients with the supposedly favorable upper-outer segment cavities failed to convert to negative. Twenty-four of the 89 patients died. The chance of success of a revision thoracoplasty is approximately 1 in 4.

Review of Gastroenterology, New York

13:417-494 (Nov.-Dec.) 1946. **Partial Index**

*Comparative Study of Cholecystography. L. L. Frank.—p. 433.
Observations on Premedication with Various Drugs in 3,000 Gastroscopies. H. A. Monat.—p. 440.
History and Office Routine in Gastrointestinal Diseases. D. A. Meiselas.—p. 442.
Polyintolerance to Drugs and Liver Dysfunctions. M. Vauthey.—p. 446.
Socialized Medicine. W. B. Rawls.—p. 448.

Cholecystography.—This study by Frank comprises a total of 600 cholecystographic examinations. Of these, 150 were done with Priodax, 150 with Dikol, and 300 with tetraiodophenolphthalein. It seemed only fair to contrast the methods used in this proportion, as there is no essential difference between Priodax and Dikol, which are trade names for beta-(4-hydroxy-3,5 diiodophenyl) alpha-phenylpropionic acid. This substance is preferable to tetraiodophenolphthalein because disagreeable side reactions are absent. Reference is made to the surgical findings in 83 cases used as a control of the preoperative diagnoses. The necessity of repeated oral examinations is stressed when the gallbladder does not fill or fills insufficiently. The diagnostic value of the nonemptying or too slowly emptying gallbladder is doubted in cases in which no other evidence of pathologic change can be demonstrated.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

2:885-930 (Dec. 14) 1946

*Diet and Canine Hysteria: Experimental Production by Treated Flour. E. Mellanby.—p. 886.
*2-Thiouracil in Treatment of Congestive Heart Failure. E. P. Sharpey-Schafer.—p. 888.
Diagnosis of Chronic Dysentery in Service Personnel: Analysis of 1,000 Sigmoidoscopies. T. C. Morton.—p. 890.
Prevention of Infant Deaths: Liaison Between Hospitals and Home Services. J. T. Lewis.—p. 893.
Observations on Vascular Injuries, with Special Reference to Value of Sympathectomy in Ligation of Main Vessels. A. M. Boyd.—p. 895.
Case of Primary Agranulocytic Angina. I. M. Librach and R. G. Cronin.—p. 897.
Effect of d-Tubocurarine Chloride on Sensation in Man. J. H. Kellgren and A. J. McGowan.—p. 898.

Diet and Canine Hysteria.—Mellanby says that canine hysteria, sometimes called running fits or fright disease, is a nervous condition in dogs that has been observed in Britain and the United States for the last twenty years. This condition can be produced experimentally in growing dogs by including in their diet flour that has been bleached with nitrogen chloride, the agene process. The same flour when untreated did not produce the nervous malady. Dogs recovered and the typical hysteria and fits stopped when the agenized flour was removed from the diet and replaced by unimproved flour.

2-Thiouracil in Treatment of Congestive Heart Failure.—Sharpey-Schafer tried to diminish thyroid activity of patients with congestive heart failure by administering 2-thiouracil. Patients with severe congestive heart failure showing no response to bed rest, digitalis and mercurial diuretics were given 2-thiouracil in doses of 1 or 2 Gm. a day over long periods. Life may be prolonged both in the low cardiac output cases (valvular and hypertensive heart disease) and in the high cardiac output cases (heart failure with emphysema). In the low cardiac output group the arteriovenous oxygen difference may decrease as well as the resting oxygen consumption. The work of the heart may be unchanged, but output is maintained at a lower venous pressure, and in relation to oxygen consumption cardiac output is relatively increased. Patients with high cardiac output heart failure with emphysema may improve sufficiently to leave the hospital in spite of permanent reduction of arterial oxygen saturation.

Edinburgh Medical Journal

53:593-656 (Nov.) 1946

Carcinoma of Rectum, Including Survey of Present Trends in Its Operative Treatment. A. J. C. Hamilton.—p. 593.
Treatment of Toxic Thyroid Disease with Thiouracil. E. M. Watson.—p. 609.
Trauma and Nervous System, With Particular Reference to Compensation and Difficulties of Interpreting Facts. J. K. Slater.—p. 623.
Treatment of Pulmonary Tuberculosis During Past Fifty Years. R. Y. Keers.—p. 643.

J. of Obst. & Gynaec. of Brit. Empire, Manchester

53:309-404 (Aug.) 1946

Some Gynaecologic Aspects of Referred Pain. G. W. Theobald.—p. 309.
Investigation of Serum Protein Balance in Normal and Toxemic Pregnant Women. E. Møller-Christensen and J. E. Thygesen.—p. 328.
*Six Cases of Venous Intravasation Following Intrauterine Lipiodol Injection. Alice Bloomfield.—p. 345.
Spinal Analgesia for Forceps Delivery in Abnormal Labor. A. F. Anderson.—p. 347.
Calcium and Phosphorus Metabolism in Pregnancy: Survey Under War and Postwar Conditions. E. Obermer.—p. 362.
Pulmonary Tuberculosis and Pregnancy. A. L. Jacobs.—p. 368.
Cause of Prolapsus Uteri in Women in Light of Perineal Prolapse in Mice. H. Burrows and P. J. Ewers.—p. 377.

Venous Intravasation Following Intrauterine Injection of Iodized Oil.—Since intrauterine injection of radiopaque oils, such as iodized poppyseed oil, is now a common method of investigation of uterine abnormalities, especially of tubal patency in cases of subfertility, Bloomfield puts on record 6 cases of venous intravasation following this operation. Conditions predisposing to this accident include (1) injection of iodized oil within a period of less than eight days after the termination of menstruation, (2) injection immediately after dilatation of the cervix, (3) injection after curettage, before a proper interval has elapsed to allow of regeneration of the mucosa, (4) injection just prior to the onset of menstruation, when the congested and edematous mucosa readily allows of traumatization, and (5) injection with excessive force. In the first of the reported cases the contraindication listed under point 1 had been disregarded, owing to a misunderstanding. In the second case disregard of contraindication 4 or perhaps also 5 may have been responsible. Three other cases occurred within about two weeks. Since all the aforementioned conditions of safety were fullfilled, it is assumed that a new and rather rough surfaced rubber covering to the oil bearing cannula may have traumatized the cervix and permitted the ingress of iodized oil to the pelvic veins. Although as a rule this complication has few if any consequences, it may have serious and even fatal results.

Lancet, London

2:855-890 (Dec. 14) 1946

Malnutrition in Released Prisoners of War and Internees at Singapore. J. B. Mitchell and J. A. Black.—p. 855.
*Observations on Fibrinolysis: Spontaneous Activity Associated with Surgical Operations, Trauma, etc. R. G. Macfarlane and Rosemary Biggs.—p. 862.
*Amphetamine in Pulmonary Tuberculosis. L. E. Houghton and F. L. Corrigan.—p. 864.
*Fatal Use of Dangerous Universal Donor. A. D. Morgan and G. Lumb.—p. 866.
Thrombosis of Inferior Vena Cava: Technic for Demonstration. J. M. Stowers and M. E. Grossman.—p. 868.

Observations on Fibrinolysis.—Macfarlane and Biggs cite observations which suggest that fibrinolysis occurs in association with a variety of disturbances in which the common factor is obscure. The phenomenon is almost certainly due to the proteolytic digestion of fibrin resulting from activation of plasmin, a component of the enzyme system existing in normal blood. They state that fibrinolysis occurs not only after surgical operations but immediately before them in about 50 per cent of cases. The drugs used for premedication may be responsible for some cases of preoperative fibrinolytic activity. Fear of impending operation appears to cause a further proportion of positive results. Traumatic shock does not seem to be a major factor in determining fibrinolysis. The activation of the proteolytic system of normal blood, almost certainly responsible for the phenomenon of fibrinolysis, may be a part of the "alarm reaction" of Selye.

Amphetamine in Pulmonary Tuberculosis.—Houghton and Corrigan say that, contrary to popular belief, euphoria or spes phthisica is not often encountered during the active phases of pulmonary tuberculosis. The prevailing mood is commonly one of depression and overanxiety. They resorted to medication with amphetamine sulfate (benzedrine) and say that the drug appears to have value, particularly during the difficult phases of thoracic surgery and for the restoration of confidence in the depressed or overanxious patient.

Fatal Use of Dangerous Universal Donor.—A patient with group A blood died after transfusion with group O blood which contained exceptionally high alpha agglutinins. Agglutination of the recipient's corpuscles was followed by hemoglobinuria, uremia and death. Such incompatibility is not revealed by the standard cross matching tests (donor's cell against recipient's serum) and was brought to light only by subsequent titering of the donor's serum. Morgan and Lumb present the clinical, postmortem, histologic and serologic aspects of this case.

Medical Journal of Australia, Sydney

2:721-756 (Nov. 23) 1946

Medical Education in Psychiatry in Australia. W. S. Dawson.—p. 721.
Psychologic Medicine and the Community. J. Bostock.—p. 730.
Bacterial Endocarditis. J. H. Halliday.—p. 731.
Bacterial Endocarditis. Jean Armytage.—p. 736.
*Effect of Cerebrospinal Fluid on Interaction Between Rh Agglutinins and Agglutinogens. Rachel Jakobowicz and Lucy M. Bryce.—p. 740.

Interaction of Cerebrospinal Fluid and Rh Agglutinins.—Jakobowicz and Bryce point out that specimens of human serum containing strong anti-Rh agglutinins did not agglutinate group O Rh$_1$ cells when chemically normal cerebrospinal fluid was used (instead of saline solution) as the diluent for the serum dilutions and the red cell suspensions. The inhibition occurred irrespective of whether the cerebrospinal fluid was obtained from Rh-positive or Rh-negative persons. The inhibition of Rh agglutination by cerebrospinal fluid can be overcome by the addition of human serum or human albumin. Artificially prepared fluids containing the main known chemical components of cerebrospinal fluid do not mask Rh agglutination, nor does the chemically similar allantoic fluid of the chick embryo, but cerebrospinal fluid from 1 rhesus monkey and 1 rabbit had a similar effect on human Rh agglutination, as did 15 samples of human cerebrospinal fluid. The inhibiting effect of the cerebrospinal fluid may be related to the blocking phenomenon.

Practitioner, London

157:413-492 (Dec.) 1946

Diabetes Mellitus 1921-1946. E. P. Joslin.—p. 413.
Treatment of Diabetes Mellitus. W. Oakley.—p. 420.
Diabetic Coma. G. Graham.—p. 426.
Laboratory Diagnosis of Diabetes Mellitus. A. Lyall.—p. 430.
Diabetes from Patient's Point of View. By a Diabetic Doctor.—p. 440.
Fibrositis. W. Tegner.—p. 446.
*Some Aspects of Wrist Injuries in Elderly Patients. D. L. Griffiths. —p. 455.
Treatment of Carcinomatous Ulcers. D. C. L. Fitzwilliams.—p. 462.
Prophylactic Use of Sulfonamides in Infective Diseases. J. Boycott. —p. 466.

Aspects of Wrist Injuries in Elderly Patients.—Griffiths says that it is still inadequately realized that, apart from quite trivial injuries, the most frequent result of injury in the region of the wrist is a fracture. The majority of these fractures are undisplaced, or insufficiently displaced to produce visible deformity. They are therefore easily overlooked, and the possibly disastrous effects of their neglect will continue until every practitioner is aware that a genuine "sprained wrist" is a rare occurrence. The facile diagnosis of "sprain" has meant failure to recognize many fractured carpal scaphoids in young adults, and in older people the so-called sprain is all too often an impacted fracture of the lower end of the radius. If a wrist injury is severe enough to make the patient seek medical advice, it is severe enough to require an x-ray examination and, to be adequate, the films must include anteroposterior, lateral and oblique views. The author discusses Colles's fracture, fractures of the radial and ulnar styloid process and carpal injuries in elderly patients.

Proceedings of Royal Society of Medicine, London

40:1-34 (Nov.) 1946

Sudden Shifts of Body Fluids. G. R. Cameron.—p. 1.
Physiotherapy in Accident Service. M. Page.—p. 15.
Injuries of Cervical Vertebrae. V. H. Ellis.—p. 19.
Protein Metabolism in Relation to Disease. H. P. Himsworth.—p. 27.

Semaine des Hôpitaux de Paris

22:1933-1972 (Nov. 14) 1946

Incidence, Severity and Causes of Acute Poisoning Produced by Illuminating Gas in Region of Paris During Period 1939 to 1946. L. Binet, M. Conte and H. Cabau.—p. 1933.
Study of 136 Cases of Acute Carbon Monoxide Poisoning. L. Binet and M. Conte.—p. 1938.
*Lesions of Central Nervous System Produced by Carbon Monoxide Poisoning. J. Lhermitte and De Ajuriaguerra.—p. 1945.
Carbon Monoxide Poisoning in Child 3 Years of Age with Diffuse Neurologic Symptoms, Progressive Improvement and Partial Blindness. G. Heuyer, M. Conte and A. Rouault de la Vigne.—p. 1948.
Mental Disturbance Due to Carbon Monoxide Poisoning, with Reference to 50 Observations. J. de Ajuriaguerra and A. Rouault de la Vigne. —p. 1950.

Lesions of Nervous System in Carbon Monoxide Poisoning.—According to Lhermitte and Ajuriaguerra the changes in the brain in carbon monoxide poisoning differ widely, depending on the time elapsed between the exposure and necropsy. Hemorrhages, necrobiosis, necrosis and edema characterize the anatomic picture in cases in which death occurred rapidly. These changes may involve primarily the lenticular nuclei but also the subcortical white matter, the hippocampus, the substantia nigra and the cerebellum. Changes in the vascular network with infiltration of the walls by neutral lipids and by a peculiar substance containing ferric salts, calcium and lipids may be observed in cases in which the poisoning continues for a prolonged period or in which death is delayed. A diffuse demyelinization of the entire white matter of the brain similar to Schilder's diffuse cerebral sclerosis may be observed in cases in which death occurs after a long period of remission. It is suggested that in carbon monoxide poisoning a toxic factor in addition to the anoxic factor affects the neuroglia and the vascular network, with specific involvement of the basilar region and the white fibers of the centrum ovale.

Prensa Médica Argentina, Buenos Aires

33:1419-1460 (July 12) 1946. Partial Index

*Primary Cancer of Duodenum: Seven Cases. M. R. Castex, C. B. Udaondo and V. D'Alotto.—p. 1419.
Cardiopathies and Rheumatic Fever: Statistics of 550 Cases in Children. M. Sloer, L. Velles Aguirre and M. Berezovsky.—p. 1432.

Primary Cancer of Duodenum.—Castex and his collaborators report 7 instances of primary cancer of the duodenum in persons between the ages of 38 and 60. The tumor was located in the periampullar segment in 5 cases. Adenocarcinoma was the most frequent type of tumor observed. The treatment is surgical. Early diagnosis and an early operation are of importance in the prognosis. The type of operation depends on the seat and extension of the tumor.

Acta Medica Scandinavica, Stockholm

125:505-606 (Sept. 30) 1946

Blood Phosphorus Distribution in Certain Internal Diseases. O. Helve. —p. 505.
Investigations of Concentration of Epinephrine in Blood: III. Concentration of Epinephrine in Blood under Certain Pathologic Conditions, Especially Hypertension. M. Kobro.—p. 523.
Fractional Serum Protein Analysis by Means of Hypobromite Titration. J. E. Thygesen and E. Møller-Christensen.—p. 538.
*Case of Pancreatic Lithiasis Caused by Actinomycete, with Survey of 58 Cases of Pancreatic Stones. J. B. Dalgaard.—p. 557.
Musculoarticular Pains in Light of Figures Pertaining to Oxalic and Uric Acid in Blood. J. W. Grott, in collaboration with F. Kowalski and S. Windyga.—p. 576.
Urobilinogen Tolerance Test as Functional Liver Test. T. K. With. —p. 588.

Pancreatic Lithiasis.—Dalgaard reports 1 case of pancreatic lithiasis in a woman aged 76. Necropsy revealed a highly atrophic and lipomatous pancreas, particularly in the head. The pancreatic duct was dilated and contained several pea-sized stones. A gram-positive mycelium with spurs, obviously an actinomycete, was demonstrated in the stones on microscopic examination. Gram-positive cocci and a few coarse gram-positive bacilli were observed. The mycetes in combination with these bacteria are to be considered as the cause of the lithiasis. Fifty-eight cases (0.43 per cent) of pancreatic lithiasis were observed in a study of 13,350 necropsies which were performed at a hospital in Stockholm during the period 1926 to 1943. The incidence was considerably higher (1.56 per cent) during the period 1940 to 1943, when special attention was paid to the pathology of the pancreas.

Nordisk Medicin, Gothenburg

31:2123-2186 (Sept. 20) 1946

So-Called Cardiospasm and Cancer in Cardiac Tract. A. Gjertz. —p. 2123.
Calmette Vaccination in Sweden. J. Lundquist.—p. 2126.

Hospitalstidende

*Frequency of Rheumatic Fever: Analysis of 225 Cases. F. Harving. —p. 2127.
Roentgen Diagnosis of Extrauterine Pregnancy. B. Nielsen.—p. 2131.

Hygiea

Is Benign Lymphogranulomatosis Fungous Disease? E. Törnell. —p. 2149.

Frequency of Rheumatic Fever.—Harving states that the increased frequency of grave and moderately grave cases of rheumatic fever observed in the Odense District and City Hospital during the last three years is reflected in a general increase in the Danish population. The 225 cases were evenly apportioned between men and women. Heart disease was diagnosed in 109 (48 per cent) of the cases; men were more often and more gravely affected than women. On the whole the increased frequency does not seem attributable to conditions due to the war. Increased cyclonal character of the climate is suggested as contributing to the rise in frequency of this disease.

Book Notices

Diabetic Care in Pictures: Simplified Statements with Illustrations Prepared for the Use of the Patient. By Helen Rosenthal, B.S., Associate Dietitian in the Food Clinic, The Boston Dispensary, Boston, Frances Stern, Chief of the Food Clinic, The Boston Dispensary, and Joseph Rosenthal, M.D., Chief of Diabetic Clinic, Assistant Medical Director, Medical Supervisor of the Domiciliary Medical Service, The Boston Dispensary. Boards. Price, $2. Pp. 150, with 137 illustrations. J. B. Lippincott Company, 227-231 S. 6th St., Philadelphia 5; Aldine House, 10-13 Bedford St., London, W. C. 2; 2083 Guy St., Montreal, 1946.

This little volume, designed for diabetic patients, is profusely illustrated and presents an appealing approach to the problem of diabetes and its management. The text is short and to the point, thus not confusing the average patient. It presents all that a person with diabetes needs to know. The illustrations are good. A diabetic patient who sees these is encouraged from the start in the knowledge of how much he really can eat. Such an encouragement presents diabetes to the patient as a simple dietary problem. Pictures with a light text tell more than just text alone. The illustrations "Carbohydrate Exchange," "Protein Exchange" and "Fat Exchange" are excellent as far as they go, but much teaching will be needed to show an average diabetic patient how to use them for the simple reason that they present just one item, namely either the carbohydrate, the protein or the fat content alone. They do not tell the patient what else (carbohydrate, protein, fat, calories) that particular portion contains. As exchanges they are excellent but since they do not present the other food constituents, the patient will have to spend much time in hunting up the rest of the information which is essential. A complete analysis of carbohydrate, protein, fat and calories at the bottom of each square would have simplified this point. The illustrations on the use of the syringe are good and should be easy to grasp. However, here again we run into an anachronism. Why burden a patient with antiquated procedures of a tray set up for an insulin outfit when such simple and practical adjuncts as the B & D insulin outfit is available? This covers only one tenth of the space as does the tray, eliminates boiling the syringe, saves time. Progress has made the "horse and buggy" obsolete and we should keep up with it. The same applies to the urine tests, another tray with paraphernalia, the use of the spoon, the messiness of the whole procedure, when all that is needed is a small bottle of tablets and a small test tube such as the "Clinitest," with no boiling, no messing around and a prompt reaction. We must learn to conserve the patient's time as well as our own. On these two points one certainly could improve much. The color plates for the sugar, diacetic acid and acetone and the various kinds of insulin are good. Also the illustrations for the care of the feet. All in all it is a spendid little book, a good addition to the lay literature on diabetes.

Operative Gynecology. By Richard W. Te Linde, M.D., Professor of Gynecology, Johns Hopkins University, Baltimore. Fabrikoid. Price, $18 Pp. 751, with 324 illustrations. J. B. Lippincott Company, 227 S. Sixth St. Philadelphia 5, 1946.

"The author has attempted to fill this void [field of gynecologic surgery] with the present volume." He continues with the idea of bringing operative gynecology up to date in a single volume and then adds "this volume should be of value to those who, by self instruction, must acquire a certain degree of operative skill." He invites general surgeons to use the book.

The book contains many drawings. Like all first editions certain errors are present. For instance, there is one chapter entitled "Retrodisplacement of the Uterus" and yet in the index there is no reference to retrodisplacement or retroversion of the uterus. Prolapse is treated in a separate chapter. There is a limited number of colored reproductions. No doubt the author is most disappointed in their poor reproduction.

A good amount of space is set aside for proper diagnosis, preoperative care, armamentarium and anesthesia. The preoperative care and complications, armamentarium and anesthesia fill thirty-seven pages, while postoperative care and complications are disposed of in thirty-two pages. He uses only a page and a half for the treatment of postoperative peritonitis. By contrast, under the heading of "Gonorrhea and Its Complications" two full pages are given for the description of laboratory methods, three pages for treatment of the lower genital tract gonococcic infection, and then general discussion before approaching the subject of surgery for residual gonococcic disease. He described many operations for residual damage to the tubes and ovaries.

Discussion of the indications for surgery and the type of operation which one should perform is not direct or positive. The discussion of estrogen therapy for the menopause is limited almost exclusively to pellet implantation without comparison or adequate reference to other routes and types of therapy. As one reads the book the impression develops that it is more of a gynecologic textbook, with major emphasis on surgery rather than a gynecologic surgical volume. It gives the impression in some portions that the author is removed from obstetric problems and hence the intimate relationship of obstetrics and gynecology. He emphasizes the virtue of the use of the finger in the completion of abortion. Yet most gynecologists condemn this procedure.

The medical profession should expect a superior gynecologic volume because of the author's stature in the field of gynecology, his institutional connection and appointment, his scientific and clinical ability and his rich clinical experience. Probably the shortcomings have been the product of the stress and strain of the past few years. The next edition, and there is reason to believe there should be one in the near future, will undoubtedly come up to the level which we expect of Te Linde's efforts.

The many illustrations with the several operative steps are valuable and easily followed, so much so that they serve their purpose very well. Obviously the better portions (there are several) deserve full credit and strong recommendation. In spite of these criticisms this book on operative gynecology represents a major contribution in this special field. Special comments should be offered about the illustrations, for they were done by well known medical artists. The publishers (except for colored reproductions) have maintained their usual standard. Te Linde has presented his views concisely, easily and clearly. This book will undoubtedly be used generally and referred to frequently by a large number of the profession.

Jewish Luminaries in Medical History. By Harry Friedenwald, M.D. And a Catalogue of Works Bearing on the Subject of the Jews and Medicine from the Private Library of Harry Friedenwald. Cloth. Price, $3. Pp. 199, with 3 illustrations. Johns Hopkins Press, Homewood, Baltimore 18, 1946.

This deals with the most important contributions of Jewish medical men to medical science. The first part of the book contains a delightful essay of twenty-four pages on Jewish luminaries in medicine. The rest of the volume is devoted to a catalogue of books, pamphlets and manuscripts written by Jewish physicians or about Jewish physicians through the ages. The catalogue is limited to the collection in the private library of the author but it is quite complete, as Dr. Friedenwald happens to possess the largest collection of works on Jews in medicine. Although the catalogue of Steinschneider published at the end of the nineteenth century contains a greater number of references, Dr. Friedenwald's volume has the advantage of bringing the material up to date. Furthermore, the interesting comments and explanatory notes that accompany many of the listings make Dr. Friedenwald's catalogue much more than a mere listing of books and manuscripts. This little volume adds a great deal of information to our knowledge of the Jewish contributions to the progress of medical science. It can be read with interest and profit not only by the student of Jewish medical history but by any one interested in general medical history. Dr. Friedenwald has made a life study of the subject, and his work is authoritative.

Ocular Prosthesis. By J. H. Prince, F.B O A., F.S M.C., F.I.O. Cloth. Price, $4. Pp 134, with 76 illustrations. William Wood and Company, Mt. Royal & Guilford Aves., Baltimore 2, 1946.

The author, a sight testing optician in Great Britain, corresponding to an optometrist in this country, presents an interesting little book on the artificial eye. When he sticks to the subject of making and fitting artificial eyes his words are perhaps authoritative. Unfortunately, like so many other nonmedical practitioners, when he enters the realms of anatomy, physiology, diagnosis and treatment many of his statements are misleading. He seems unable to resist mentioning, lightly to be sure, clinical syndromes, using as one of his authorities Haskel

J. Kritzer, whose system of "Iridiagnosis" is without scientific standing. The treatment Prince advocates for gonorrheal conjunctivitis, who states that "it can be minimized by the use of an undine and one in five thousand solution of perchloride" is criminal in the light of present knowledge. He names papillitis as one of the diseases calling for enucleation, and his statement that "scars [of the conjunctiva] are healed with silver nitrate pencil" is highly improper. These and other inaccurate remarks will lead astray readers whose medical knowledge is as garbled as his own. Ophthalmologists will have little use for this book.

The Second Forty Years. By Edward J. Stieglitz, M.S., M.D., F.A.C.P. Foreword by Anton J. Carlson, A.M., Ph.D., M.D. Cloth. Price, $2.95. Pp. 317, with illustrations by Ann Stieglitz. J. B. Lippincott Company, 227 S. Sixth St., Philadelphia 5, 1946.

The customary attitude toward advanced age is one of fear disguised as disregard. At best, old age is looked on as a necessary evil, an undesirable accessory of a state which all of us hope to reach. What do we do about it? The individual's effort may culminate in the provision of an old age annuity. The attitude of the individual is reflected in the attitude of the community and of the country as a whole: federal funds to the amount of more than $400,000,000 are annually allocated to old age assistance, but not one cent of this is used to study the disabilities which prevent these elderly dependents from earning their own way. Dr. Stieglitz, editor of *Geriatric Medicine* and a recognized student of gerontology, has undertaken to present to the lay reader what is known scientifically about old age. The first four chapters deal with the general problem of senescence. Heart, hypertension, nutrition, sex and cancer are discussed in the following five chapters. Then follow chapters on the mental and emotional processes of the aging person, on the importance of proper utilization of leisure, on social significance of aging, and a concluding chapter on constructive medicine. The book is intended for the intelligent reader. It is refreshingly different from most books which attempt to popularize medicine by talking down or by sensationalism. Even the physician will find in it a well written introduction of a new branch of medical practice and research.

Líquido céfalo-raquídeo L. C. R. Por el Dr. Ernesto Daniel Andia, jefe del servicio de clínica neurológica del Hospital municipal "P. Fiorito" de Avellaneda. Paper. Pp. 246, with 108 illustrations. Buenos Aires: Librería y editorial "El Ateneo," 1946.

Every phase of cerebrospinal fluid in its application to clinical medicine is covered. In addition there is a chapter on the origin, circulation and absorption of the fluid. This chapter is profusely illustrated by x-rays of the ventricles and subarachnoid spaces. Most of the illustrations are visualizations through iodine preparations, a method now rarely employed in this country because iodine does not absorb well from the subarachnoid spaces. The author also makes use of encephalograms among his illustrations. The methods of examination presented are those in popular use except for the urea determination. The usefulness of the quantitative determination of this substance is questionable, as is the value of bilirubin, to which the author attaches some importance. Of special interest are the chapters on cerebrospinal fluid in kidney disturbances, in jaundice and in multiple sclerosis and the discussion of stasis of the cerebrospinal fluid. The text is followed by a bibliography of studies by the author and his associates. One feels that additional reference to the work of other investigators would have made the book much more valuable. The volume is a useful compendium for the clinical examination and interpretation of the cerebrospinal fluid.

Monocular Vision Training. By Mildred Smith Evans. Cloth. Price, $3. Pp. 93, with illustrations. Williams & Wilkins Company, Mt. Royal & Guilford Aves., Baltimore 2, 1946.

The unusually large print in this volume is certainly conducive to stimulation of the child with a poor eye. In addition the drawings with the tissue paper for copying are an excellent method to induce the child to take interest in this one-eyed book. There are two suggestions that could be made to make it of more value: some of the drawings should have been in color; then too the price is somewhat high. However, the need of such a book will make available for the many one-eyed children a worth while addition to the armamentarium for orthoptic training.

The Principles of Neurological Surgery. By Loyal Davis, M.S., M.D., Ph.D., Professor of Surgery and Chairman of the Division of Surgery, Northwestern University Medical School, Chicago. Third edition. Cloth. Price, $7.50. Pp. 540, with 197 illustrations. Lea & Febiger, 600 S. Washington Square, Philadelphia 6, 1946.

For over a decade this text book has been one of the standard reference works in neurosurgical problems for students and general practitioners. The fact that it is now in its third edition is ample evidence of its proved usefulness. The stated purpose of the author is to "present easily assimilable facts which will aid in the development of a more accurate concept of neurological surgery" in those practitioners who are not expert neurologists or neurologic surgeons. The volume is carefully divided into chapters on neurologic diagnosis, cranial and intracranial injuries and disease, spinal cord injuries and disease, peripheral nerve injuries, pain, the autonomic nervous system, epilepsy and the lesions more difficult to classify, such as cervical rib and syringomyelia. Of special value and reflecting the progressive outlook of the author are the discussions on the newer concepts in the treatment of the paraplegic and the use of chemotherapy in the infections. Of interest to the general practitioner is an accurate but conservative evaluation of the surgical treatment in essential hypertension. This book can be freely recommended to all those desiring an accurate, interestingly written and well illustrated statement of the principles of neurosurgery.

Conduction Anesthesia: Clinical Studies of George P. Pitkin, M.D., F.A.C.S., F.I.C.A. Edited by James L. Southworth, M.D., and Robert A. Hingson, M.D. With chapters prepared by Winifred Pitkin, M.D., M.R.C.S., and others. Fabrikoid. Price, $18. Pp. 981, with 606 illustrations prepared for the clinical studies under the direction of Dr. George P. Pitkin. J. B Lippincott Company, 227 S. Sixth St., Philadelphia 5, 1946.

This book was begun by Dr. George P. Pitkin. After his death it was completed with chapters prepared by Drs. Winifred Pitkin, A. R. McIntyre, Frederick M. Allen, Waldo B. Edwards, Louis A. Palmer, William T. Lemmon, Lyman W. Crossman and Henry G. Hager Jr. It was edited by Drs. James L. Southworth and Robert A. Hingson. Following a historical introduction there are chapters on anatomy of the cranial nerves, anatomy of the spinal nerves, the autonomic nervous system, pharmacology and toxicology of cocaine and synthetic local anesthetics, shock and principles of conduction anesthesia. A variety of chapters deal with anesthesia in anatomic regions such as the head, blocking the trigeminal nerve, cervical block and other subjects. There is a chapter on spinal anesthesia by the late Louis A. Palmer and one on continuous spinal anesthesia by William T. Lemmon. Refrigeration anesthesia is discussed, as is also therapeutic nerve block. An attempt has been made to present many methods of doing each of the blocks. This book is an attempt to deal in great detail with one phase of anesthesiology. It is to be hoped that the book will be useful, although possibly it will be somewhat confusing to those who are not expert enough to do without it.

Spanish-English Medical Dictionary. Compiled by Maurice McElligott, F. R. C. S., D. P. H. Fabrikoid. Price, $3; 12s. 6d. Pp. 250. Paul B. Hoeber, Inc. (Medical Book Department of Harper & Brothers), 49 E. 33d St., New York 16; H. K. Lewis & Co., Ltd., 136 Gower St., London, W. C. 1, 1946.

This dictionary is now given to the Spanish speaking medical world with confidence but with full knowledge of its limitations. The compiler asks all who consult it to apprise him of any lacunae which they may observe for correction in future editions. Acknowledgment for help is presented through the book to Dr. Josep Trueta of Barcelona and Dr. J. Perera y Prats of Madrid and to Mrs. Isobel W. Brocklehurst, M.R.C.V.S., of the Department of Veterinary Pathology of the University of Liverpool for the list of veterinary terms which appears at the end of the book. More than 14,000 medical terms are translated into English. In these days it is almost imperative for Spanish speaking physicians and scientists to be familiar with English medical terms. On this account the dictionary will be a great help, especially in Spanish medical libraries. The author gives credit to Dr. Joaquin Pi for Pi's Spanish Medical Dictionary, but he does not mention Moll's Spanish-English Medical Dictionary (Dicionario Médico Español Inglés), which was published by the American Medical Association. This omission probably can be excused since copies of Moll's dictionary have not been available for many years. Some of the medical terms are slightly misspelled, as for instance the Spanish word "amoratado-a," which is erroneously written "amoratodo" and the English words "chemiotaxis" and chemotherapy," which are erroneously written "chimiotaxis" and chimiotherapy," although this failing could be corrected in future editions.

Medical Research: A Symposium. Edited by Austin Smith, M.D. Cloth. Price, $5. Pp. 169, with 17 illustrations. J. B. Lippincott Co., 227 S. Sixth St., Philadelphia 5, 1946.

The book opens with a classically beautiful essay by Torald Sollmann, in the style of Claude Bernard, on the fundamentals of medical research. After discussing training, materials, supplies and the like he comes to motives and objectives. Research is seen either as pioneering and adventurous, with "plenty of fun and disappointments," in which a ten-strike is the goal; or, as developmental, an engineering problem, comprising long and carefully planned work. The latter type lacks some of the romance of the former but is more certain to return a yield, even though it be a gleaner's. The systematic and meticulous are most happy with this type, the dreamers of heights with the first. Fortunately, however, men are not simply made, and even "classicists have some of the gipsy in them." Cooperative research, which is at times "a method of production rather than of discovery," is of little use to the pioneer but may be utilized by the developer who can better outline the mechanics of his work. Finally, research is truth. It is also a game of skill and luck, and he wins "who fights for the prize of prizes, the devotion to an exacting ideal."

In the next essay Austin Smith discusses the more practical aspects of research, its expense and financing and the necessity of providing the individual young investigator with freedom for thought, bonuses for ideas and family security. Again, at the present time some problems have answers beyond our horizons; for instance, what will be the ultimate effect of penicillin and the sulfonamides, and of DDT, on the complexity of human environment? Research, even though it is costly and often fruitless, must be pressed to solve such ever new problems in health.

The late Herbert Calvery of the Food and Drug Administration then discusses the laboratory, its building, equipment and supplies, and then its organization. S. DeWitt Clough, chairman of the board of a large pharmaceutical house, describes the manufacture of drugs and particularly the part of industry in the development of new drugs. Also he describes the requirements for safety of the Federal Food and Drug Administration before a drug can be marketed, and the great desirability of cooperation with the Council on Pharmacy and Chemistry of the American Medical Association. If the remedy is "accepted" by this body, the individual practicing physician is impressed that it will be effective as well as safe, because this committee of experts represents his best source of unbiased therapeutic information.

Eldon M. Boyd reviews university research, and especially that principal hazard, administrative responsibilities, when, at the age of 40, the researcher becomes a department head. The solution is, in many cases, a losing one for research. The sometimes forgotten but ever present opportunities for "clinical research with a notebook" are described by Walter Alvarez in his usual interesting and tantalizingly thoughtful case stories. Morris Fishbein concludes the general discussion with a consideration of the publicizing of medical research and the hazards and abuses of public information, yet its necessity.

The last chapter, on photography, is like the laboratory exercises appended to a lecture course. In it is shown what research in one particular field can produce. The most breath-taking picture in the chapter is figure 16, which is the picture of a molecule of hexamethyl benzene, magnified 15 million times by x-ray diffraction, to show the carbon atoms individually in their true spatial arrangement. It is like the boy's first look through a microscope at an utterly new realm.

The book as a whole is delightful reading in itself for researchers. It is additionally valuable because it cannot fail to stimulate other readers to participate in, or to support, ventures into newer knowledge.

Victory Over Pain: A History of Anesthesia. By Victor Robinson, M.D., Cloth. Price, $3.50. Pp. 338, with 47 illustrations. Henry Schuman, 20 East 70th St., New York 21, 1946.

This is a book which should prove both readable and informative to physicians and laymen alike. It is the last of four histories published during the two years preceding the ether centennial. Keys' History of Surgical Anesthesia and Raper's Man Against Pain were published in 1945. Ellis's Ancient Anodynes preceded Victor Robinson's Victory over Pain in 1946. All four are distinct contributions to the subject. However, one cannot avoid the feeling that no comprehensive and accurate history of anesthesia has yet been written in a manner completely satisfying to the physician whose life work is the relief of pain. Doubtless the lack of general use of the word anesthesia previous to 1846 and the frequent publication under other titles of matters dealing with anesthesia since then have caused many of the inaccuracies, omissions and conflicts in opinion found in historical writing.

The termination of the contributions of Victor Robinson to medical literature will be keenly felt among American physicians. His familiarity with the history of medicine obviously stood him in good stead in writing this, his last book. His pleasing style of expression, together with his wide acquaintance with medical history, has produced a book not seriously lacking in accuracy, comprehensiveness or readability. No attempt was made at documentation if one excepts the brief bibliography appended. It is therefore in no sense a reference book for the bibliophile. An adequate index, however, is of aid to the casual student who is not interested in sources. Anecdotes and brief character sketches, together with many illustrations reproducing old prints, portraits and photographs, add interest. This is not a book for scholarly study by the physician in his more serious moods; rather is it a reasonably accurate and fairly comprehensive story, well told, of the world's struggle to date toward the relief of pain.

Renal Diseases. By E. T. Bell, M.D., Professor of Pathology in the University of Minnesota, Minneapolis. Cloth. Price, $7. Pp. 434, with 119 illustrations. Lea & Febiger, 600 S. Washington Sq., Philadelphia 6, 1946.

This monograph is a worthy product of an expert on renal disease. It is in part a compilation of studies made by the author during the past twenty-five years and includes a large amount of previously unpublished data. The text is clearly written and is illustrated by a superb choice of photomicrographs. Only the four color plates could be improved on in their reproduction. The development of the subject follows Bell's classification of renal disease. The text is introduced by chapters on normal renal histology and normal and abnormal renal function. In addition to the discussion of the structural changes in the kidneys, the pathologic physiology and the clinical manifestations of each disease are well treated. Although only the rationale of treatment is presented, the author indicates his choice for further study of special papers on therapy. The field of renal diseases is thoroughly covered, including renal function and structural changes associated with hypertension, the toxemias of pregnancy and the renal lesions of diabetes. This monograph undoubtedly will help to bring about closer cooperation between the pathologist and the clinician and will be of value to all interested in the problems of renal disease.

La cultura in vitro del midollo osseo: Problemi di fisiopatologia ematologica studiati con la tecnica della cultura dei tessuti. Di Aminta Fieschi e Giovanni Astaldi. Prefazione di Cesare Frugoni. Paper. Price 1,000 lire. Pp. 309, with 122 illustrations. Tipografia del Libro di S. Bianchi, Pavia, 1946.

This excellent book presents the results of the study of human marrow (normal and in pernicious anemia, chronic and acute leukemia, erythroblastosis and Cooley's disease) by the tissue culture method. Plasma cells were found to originate from plasma cell blasts and megaloblasts from histioblasts, with replacement, under liver therapy, by transitional and later normoblastic forms. Cells from acute leukemia have a long survival time in contrast to those of chronic leukemia. The book is well printed, with beautiful illustrations, some in color. The conservative attitude toward controversial subjects makes it a valuable authority on the subject.

Queries and Minor Notes

The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any official bodies unless specifically stated in the reply. Anonymous communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request.

ESTIMATION OF SERUM ANTIBODIES AGAINST INFLUENZA VIRUS

To the Editor:—Where can one obtain antiserum for influenza A and B for measuring antibodies in the serum of patients? How stable is this material and how long will it remain potent in an ordinary refrigerator?

Robert B. Rodman, M.D., Wilmington, N. C.

Answer.—Antibodies against influenza A or influenza B viruses in serum of patients have been estimated by a number of different technics, including tests for virus neutralization, for complement fixation and for the capacity to inhibit the agglutination of chicken erythrocytes in vitro. For each of these procedures a suspension of virus or a preparation of viral antigen is required.

The simplest and most convenient technic available at present for measuring antibodies against influenza viruses are based on the capacity of influenza viruses to cause the agglutination of erythrocytes in vitro and the fact that the hemagglutination can be specifically and quantitatively inhibited by appropriate antibody (Hirst, G. K.: *J. Exper. Med.* **76**:195 [Aug.] 1945). Virus is grown in the chorioallantoic fluid of developing chick embryos and, for use in tests of this kind, may be kept in an ordinary refrigerator at approximately 4 C. for many months.

As far as we have been able to determine, preparations of influenza viruses suitable for use in tests to measure antibody in serum are not yet available from commercial sources. Strains of virus can probably be obtained if requested from laboratories in which the influenza viruses are being propagated and studied.

PLACENTA ACCRETA

To the Editor:—Are there any statistics available as to the recurrence of placenta accreta? The placenta accreta was found in a patient who was delivered by cesarean section. The placenta was removed with the loss of some uterine tissue. What would be the possibility of a recurrence of this condition in a subsequent pregnancy? Would this condition occurring in the first pregnancy increase the possibility of spontaneous rupture of the uterus in subsequent pregnancies?

M.D., Minnesota.

Answer.—Reports of a repetition of placenta accreta in the same patient have not been found. Theoretically if the uterus is not removed for placenta accreta, as it should be in most cases, there can often be a recurrence of the condition. In most cases of partial as well as complete placenta accreta the decidua basalis is either absent entirely or it is present as groups of cells in the compact layer. Hence the fertilized ovum is implanted directly on the myometrium and not on a decidua. This occurrence explains the failure of separation of the placenta after delivery and also the profuse hemorrhage which takes place when an attempt is made to separate the placenta from the uterine muscle manually. If the decidua is absent this may mean that the endometrium was deficient before gestation occurred or that the endometrium failed to be transformed into a satisfactory decidua because of hormonal disturbances. In either event, if the uterus is not removed it is possible for the endometrium to be regenerated sufficiently to permit normal implantation of an ovum followed by a normal pregnancy and labor. In the literature there are reports of 14 women in whom the placenta was permitted to remain intact without any attempt at removal and no operative procedure was followed other than packing or draining. All of these women survived. In fact 2 women treated in this way subsequently gave birth and had no complications in the third stage of labor.

In a case like that cited, if considerable uterine tissue was removed with the placenta there may be a distinct risk of rupture of the uterus in a subsequent pregnancy, not only because of the thinning of the uterus at this point, but also because all the decidua, if there was any, was removed, including the compact layer. In 11 cases of placenta accreta reported in the literature spontaneous rupture of the uterus took place. In 15 cases the diagnosis of placenta accreta was made at cesarean section, the indications for which were placenta previa, fibroids, disproportion and other conditions. (See Kaltreider, D. F.: *Bull. School of Med., Univ. Maryland* **30**:1 [July] 1945.)

SEDATIVES AND POSTOPERATIVE VOMITING

To the Editor:—Not rarely one sees patients who must have opiates for relief postoperatively but who have intractable vomiting from any of them that I have tried, including morphine, pantopon, dilaudid and codeine. Demerol seems less likely to bring about vomiting but frequently seems to give little pain relief. Is there any means of obviating the vomiting occurring after the administration of these drugs?

M.D., Alabama.

Answer.—The question may well be raised as to whether or not the drugs in question produce the vomiting or whether the vomiting is due to ileus, acute dilatation of the stomach or some other complication. Certainly in the hands of many surgeons these drugs are only infrequently accused of producing severe vomiting.

However, the opiates as a group are capable of inducing vomiting in occasional persons, even to the point of precluding their further use. Codeine and dilaudid (dihydromorphinone hydrochloride) are presumed to be more easily tolerated than morphine. The concomitant use of atropine or sedatives may also be helpful. Demerol (meperidine hydrochloride) is often a satisfactory alternative and, although not a highly potent analgesic, is ordinarily adequate to control postoperative pain.

NURSING BY SYPHILITIC MOTHER

To the Editor:—Please discuss the use of mother's milk when it is positive for syphilis. Kline and Kolmer serologic tests of the baby are negative. The mother's blood is Kline and Kolmer positive.

E. W. Pillstrom, M.D., Ozark, Ark.

Answer.—The inquirer's meaning as to mother's milk which is "positive for syphilis" is not clear. Does this mean that the milk has been demonstrated to contain Treponema pallidum by means of its injection into experimental animals or that a serologic test for syphilis has been done on the milk? Both of these seem highly improbable. Little is known about the infectiousness of milk for animals. Serologic tests on milk have been done experimentally, but their result is not an indication of the infectiousness of the milk.

Whether a normal infant born of a syphilitic mother should be breast fed depends not on the mother's blood test but on the duration of her infection and the character and amount of antisyphilitic treatment she has had prior to the infant's birth. If the mother has been recently infected, i. e. within two years of the birth of the infant, and regardless of the amount of treatment she may have had before delivery, it is probably undesirable for the infant to nurse unless the mother's treatment is continued during the period of lactation. This has to do not with the possible infectiousness of milk, which is unlikely, but instead with the possibility that the mother may develop a relapsing infectious lesion on or about the nipple, through which the infant may develop an extragenital chancre.

If the mother has had syphilis more than two years before the birth of the infant and whether or not she has been previously treated, it is probably entirely safe for the infant to nurse.

This question is discussed in detail on page 499 of Moore, J. E.: The Modern Treatment of Syphilis, ed. 2, third printing, Springfield, Ill., Charles C Thomas.

NIKETHAMIDE FOR HICCUP

To the Editor:—Based on the rationale that powerful stimulation of the respiratory center as by carbon dioxide inhalation terminates an attack of hiccup in most cases, I have tried the intravenous injection of nikethamide in 2 to 5 cc. doses, just enough to produce deep respirations. Most of the patients had cardiovascular disease. The action of the drug was prompt and reliable in stopping the attack. If the hiccup returned after the drug action wore off, the dose was repeated, with the same effect. References have not been found in any standard textbook on the use of nikethamide in this condition. It would be interesting to try this drug on patients who are or have become refractory to the inhalation of carbon dioxide.

Felix Schell, M.D., Passaic, N. J.

Answer.—The inhalation of 7 to 10 per cent carbon dioxide acts as a powerful stimulant to the respiratory center and probably takes precedence over the reflex stimulation of the diaphragm. However, in most cases the hiccup stops when the patient verges on loss of consciousness and appears to be in part related to the generalized muscular relaxation that follows. Nikethamide is a powerful respiratory stimulant which might also take precedence over the habit reflex diaphragmatic spasm.

Subcutaneous injection of 0.5 cc. of ether also promptly stops hiccup. This results in intense momentary pain. With the use of ether and carbon dioxide the cessation of hiccup is frequently temporary, but repeated use of either procedure usually results in permanent cure. It would be interesting to try other cases with nikethamide and probably also with metrazol.

VICARIOUS MENSTRUATION

To the Editor:—What recent information is there with reference to vicarious menstrual bleeding? A patient for many years has had a Vincent's infection in her mouth, having also a good deal of bleeding from her gums. This infection was treated with apparent success and the bleeding from the gums stopped, except during the normal menstrual period, at which time her gums bled rather profusely. I have given no treatment to date. Can you advise me what I might do? Would I be correct in assuming that pregnancy would discontinue this bleeding?

James Frenkil, M.D., Baltimore.

Answer.—There has been no new information concerning vicarious menstruation. The type which this patient has is called "supplementary vicarious menstruation" to distinguish it from true "vicarious menstruation," a condition in which the periodic bleeding occurs from various parts of the body, usually mucous membranes, but not from the uterus. The cause of this condition is unknown. According to many investigators there is during menstruation an increased capillary permeability involving the whole body which may have a bearing on vicarious cyclic bleeding. The periodic bleeding will almost certainly cease during pregnancy. There is some relationship between the mucous membranes, especially of the nose, and the estrogens. However, true vicarious menstruation has been reported in women after the menopause, after hysterectomy and following bilateral oophorectomy; hence the relationship between this type of bleeding and the sex cycle may be questioned.

Unfortunately there is no specific treatment for vicarious menstruation; hence therapy is empirical. The estrogens have helped some patients but have had no effect in others. If bleeding points can be seen they should be cauterized. Vitamins C and K should be administered, although they may not do any good.

SYNCOPE

To the Editor:—A woman aged 59 has had attacks or spells for about two years in which she has dizziness and a sensation of cessation of circulation with numbness embracing the entire body. During this period of syncope the veins in the fingers and hands suddenly swell and become pronounced. After stimulative treatment, rest and massage these veins disappear completely, the body circulation is resumed and the sensation of numbness leaves her. The patient has had two severe attacks in the two year period and numerous mild ones. Her first warning of the oncoming attack is a sensation as if there were running water inside the head with a sort of sizzling noise in the back of the head. The patient had the menopause thirteen years ago. She has had no operation nor serious illness. At the time of the first serious attack her blood pressure was very low. At present the blood pressure is 130/85. The heart is normal. The weight is 170 pounds (77 Kg.), the height 5 feet 7 inches (170 cm.). The patient has varicose veins.

Morris H. Pett, M.D., Gloucester, Mass.

Answer.—In order to arrive at a definite diagnosis, additional data are required. If the syncope is transitory in nature and the attacks occur in the standing or sitting position, a reflex syncope is suggested probably caused by a hypersensitive carotid sinus. The diagnosis can be established by artificial reproduction of the spontaneous attacks through stimulation of the carotid sinus (Weiss, Soma; Capps, R. B.; Ferris, E. B., Jr., and Munroe, Donald: Syncope and Convulsions Due to a Hyperactive Carotid Sinus Reflex, *Arch. Int. Med.* **58**:407 [Sept.] 1936). If the attacks occur at the time the patient assumes the erect position, blood pressure determinations may show a postural hypotension. On the other hand, if the attacks occur in any position an epileptic seizure is more likely. It would be useful to know the condition of the pulse in attacks, as various forms of cardiac arrhythmias may be the causative mechanism.

The swelling of the veins is probably the result of vasodilatation, which may involve the veins as well as the rest of the vascular bed.

MATURATION OF SPERMATOZOA

To the Editor:—What is the length of time for development of spermatozoa from the primitive germ cell to mature spermatozoa?

M.D., Arizona.

Answer.—Little is actually known on this problem. It is probable that different species require different lengths of time for the process. In the newborn rat and hamster, seminiferous tubules are solid and show a lumen and cellular activity about the sixteenth day, with spermatozoa appearing about the thirty-sixth day; this would represent a total period of twenty days from lumen formation to spermatozoa. In mature rats, on the basis of length of a spermatogenetic wave it has been estimated that from the spermatogonium to spermatozoon requires twenty days. Data are not known for man.

Just formed spermatozoa are probably not physiologically mature. The epididymis appears to exert some influence on sperm as they pass through, and apparently some days are required (estimated at six to ten or more days) to gain full physiologic maturity.

POSTTRANSFUSION DEATH IN INFANT

To the Editor:—A boy aged 4 months was hospitalized because of extreme emaciation and dehydration resulting from chronic diarrhea and improper feeding. The birth weight was 6 pounds 9 ounces (2,983 Gm.), the admission weight 7 pounds 6 ounces (3,176 Gm.). On admission he was given 250 cc. of citrated whole Rh positive blood by marrow transfusion. This was followed by clysis of lactate-isotonic solution of three chlorides, milk formula and other fluids by mouth. The patient improved during the next two days. Forty-eight hours after the first transfusion another 250 cc. of blood was given by bone marrow transfusion from the same donor. Immediately after completion of the transfusion the temperature rose to 105 F. and the skin became bluish. About two hours later a firm ecchymotic area developed in the lower abdominal wall and upper part of the left thigh. Puffiness of the subcutaneous tissues developed, particularly about the eyes. There was hemoptysis of bright red blood and passage of a small amount of blood by rectum. The subcutaneous bleeding continued until the entire surface of the body was involved, with the exception of the face. The patient's blood was Rh positive. Postmortem examination showed bleeding into most of the soft tissues of the body. Please discuss the course of events in this case. Under such circumstances how rapidly could Rh antibodies be formed so as to cause a similar succession of events? Is it possible that the patient had an Rh negative blood and that the transfusion of large amounts of Rh positive blood accounted for the laboratory's report of Rh positive blood?

M.D., Arizona.

Answer.—Posttransfusion hemorrhages are rare, and those recorded have occurred almost without exception in patients with a hemorrhagic tendency prior to the transfusion. They included retinal hemorrhages and occasional meningeal hemorrhages.

The theoretical blood volume of this infant (weight 7 pounds 6 ounces) was in the vicinity of 300 cc. He was given 250 cc. of blood, or approximately five sixths of his whole blood volume. This is equivalent to giving about 5,000 cc. of whole blood to a person weighing 140 pounds (63.5 Kg.).

It has been recommended not to give infants more than 10 cc. of blood per pound of body weight. According to this the infant received at least three and one half times the maximum permissible amount of blood.

The findings are best explained by a summation of three factors: (1) the possible hemorrhagic tendency, (2) the damaged myocardium and (3) the tremendous overloading of the circulation (approximately twice the total normal blood volume was added within forty-eight hours over and above the child's own blood). All three contributed to the heart and circulatory failure and hemorrhages.

The Rh factor had nothing to do with the reaction. Even if the infant was Rh negative the antibodies could not develop forty-eight hours after the first transfusion in an infant of this age. Transfusion reactions due to the Rh factor are of hemolytic nature with a clearcut clinical picture, and necropsy findings which are not described in this case.

If this child was Rh negative the finding of Rh positive blood could have been explained by the transfusion of large amounts of Rh positive blood, though the method of differential agglutination could show the presence of some Rh negative blood remaining unclumped.

CHEMICAL DÉBRIDEMENT OF BURNS

To the Editor:—What are the advantages of using saline-glycerin-acetic acid mixture of pH 3.8 in the treatment of burns? How is it used? Have any later methods of treatment of burns appeared?

M.D., New York.

Answer.—The use of saline-glycerin-acetic acid mixture for burns is a method of chemical débridement. The need for such measures is predicated on the common observation that the frequently necessary skin grafting in third degree burns is often needlessly delayed for several weeks by slow separation of the slough.

Chemical débridement attempts to hasten slough dissolution and to permit early skin grafting. Acetic acid was used for this purpose by Dorrance and Bransfield. Connor and Harvey used pyruvic acid at a p_H of 1.9 in 8 per cent corn starch both clinically and experimentally and found that the slough of experimental burns could be removed in forty-eight to seventy-two hours and could be followed with early skin grafting. Certain of the burns treated after the Hartford circus disaster received this treatment. Lam and Puppendahl did experiments that indicated little value in the method. The latter authors suggested that the favorable effect on sloughing obtained with pyruvic acid paste is due more to maceration than to the acid p_H. Chemical débridement is, however, still used by certain specialists in the field. Generally, however, surgical débridement is used in the form of excision of the slough at or shortly before the time of grafting.

Chemical débridement can also be applied in the form of an enzymatic digest as used by Cooper, Hodge and Beard.

If the saline-glycerin-acetic acid mixture is used, it should be applied to the burn as a compress, either immediately or at the first change of dressing.

The most widely accepted form of burn treatment at the present time is the compression method. This involves rapid covering of the burn under aseptic precautions, holding of the dressing in place with a voluminous compression bandage and keeping the cover intact without change for at least ten days after the injury (Allen and Koch). The inner layer of this dressing is of fine mesh gauze and may be applied either dry, moistened with saline solution or petrolatum or, more rarely, impregnated with other medicaments.

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INTRAVENOUS BARBITURATES FOR ORAL SURGERY

To the Editor:—Please discuss the use of pentothal sodium in oral surgery, particularly dental surgery. G. A. Goshgarian, M.D., Waukegan, Ill.

Answer.—The intravenous barbiturates have been used extensively to provide anesthesia for operations in the mouth, and many workers have produced satisfactory results in this way. There are certain reasons, however, for which intravenous anesthesia for these purposes is open to criticism. Complete patency of the respiratory passages is of paramount importance because of the depression of respiration to which the barbiturates give rise. Because of the nature of the operation the "airway" is prone to become obstructed. Laryngospasm may easily occur unless a large dose of the drug is given before the intensely "painful" stimulus of dental extraction. Operations in the mouth are often performed in the sitting position, and some feel that the relative cerebral ischemia in this position predisposes to circulatory collapse. Reference is made to Intravenous Anesthesia by R. Charles Adams (New York and London, Paul B. Hoeber, Inc., 1944, pp. 517-519).

MIGRAINE ASSOCIATED WITH MENSTRUATION

To the Editor:—A woman aged 30 has suffered severe premenstrual migraine headache, lasting three days and ending with the onset of menstruation, during the past two years, since marriage. A year ago she had her first and only pregnancy, ectopic, requiring resection of a tube and ovary. This did not affect the migraine, which is relieved only by repeated injections of sodium nicotinate intravenously during the attack. Last month she received 10,000 units of estrogenic substance twice weekly for the entire menstrual cycle, and the migraine was worse than ever. Physical examination is negative; blood count and urine are normal. Would desensitization with autogenous serum help if taken between attacks?

Bernard Marcus, M.D., Raritan, N. J.

Answer.—Migraine associated with the menstrual cycle is extremely difficult to treat satisfactorily. A specific treatment thus far has not been brought forth.

GENERALIZED PRURITUS

To the Editor:—A woman aged 38 has had severe pruritus for the past eighteen months which is generalized over the entire body including the vulva and anus. Her past history is entirely negative except for an amenorrhea for twelve months. *The patient has been given sedatives,* theelin and local applications without effect. Because of the severity of the pruritus, especially at night, she has indulged in alcohol for the past six months "to be relieved." *Mental sequelae are feared unless the* patient improves. A recent thorough study was made in a Philadelphia hospital including a dermatologic examination. "Nerves" was the only diagnosis established. Please suggest further treatment.

M.D., Pennsylvania.

Answer.—The generalized pruritus almost certainly has no connection with the amenorrhea, which it preceded by about six months. Therefore it is hardly likely that restoration of regular menstruation, even if it can be accomplished, will relieve the itching. The fact that the pruritus involves the entire body and that careful physical and dermatologic examinations have failed to reveal a cause leads one to believe that there may be a large psychic element in the pruritus. In this event sedatives and local treatment will not give permanent relief. The patient should be seen by a psychiatrist, but it may be wise first to have another dermatologic consultation.

TREATMENT OF MIGRAINE

To the Editor:—Please let me know the rationale concerning the use of nicotinic acid, nicotinic acid amide and sodium nicotinate in the migraine variety of headache. Which of these preparations would be most helpful in migraine? Would you also please let me know where sodium nicotinate may be obtained? Is the use of gynergen for migraine any longer acceptable?

M.D., Connecticut.

Answer.—The treatment of migraine is still not as clearcut as might be desired. The explanation for the use of vasoconstricting drugs in some cases and vasodilating preparations in others is to be found in the apparent recognition of two types of migraine: (1) attacks with primary vasodilatation and (2) attacks with evanescent primary vasoconstriction followed by more prolonged vasodilatation. Nicotinic acid and sodium nicotinate are rationally employed in the early, transient vasoconstriction phase of the second type of migraine. The use of nicotinic acid amide is totally irrational for either type of migraine; the drug possesses neither vasodilating nor vasoconstricting properties. Nicotinic acid and sodium nicotinate would seem to be equally effective when used in equivalent quantities. Sodium nicotinate may be obtained from the Drug Products Company, Inc., Long Island City, N. Y.

Ergotamine tartrate (gynergen) is still one of the most effective drugs for use in the majority of migraine attacks, the resultant vasoconstriction acting against intracranial vasodilatation whether primary or secondary.

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ANTIHISTAMINE DRUGS AND HYPERTENSION

To the Editor:—A man aged 49 has been having attacks of hay fever for the past several years. During the last year or two he has developed a hypertension which responded to medical attention and rest. During the past year benadryl was prescribed and relief obtained from his hay fever. At the same time, however, he developed a high blood pressure, 192/120. Kindly advise whether or not the use of benadryl or pyribenzamine is indicated in this type of case. His pressure now is normal, 140/80.

M.D., New Jersey.

Answer.—It is definitely not the customary action of either benadryl or pyribenzamine to produce a hypertension. As a matter of fact, although extensive studies have not as yet been reported on that phase, the present evidence (Friedlaender, Sidney, and Feinberg, S. M.: *J. Allergy* **17**:129 [May] 1946) seems to indicate that there is a tendency for these drugs to lower blood pressure. It should be added that any drug may on rare occasion exhibit side reactions decidedly different from its usual ones: hence the inquirer's observation should be rechecked on the particular patient.

ASTHMA AND ALTITUDE

To the Editor:—A patient with long standing asthma is under my care and is contemplating a trip from Ohio to California. Would traveling in an airplane be harmful to him? Would the high altitude affect him in any way?

M.D., Ohio.

Answer.—Asthma is not caused by anoxia, nor is the usual attack of asthma associated with anoxemia. The latter phenomenon is discernible only in the severe stages of status asthmaticus. On the other hand the high altitudes, owing in part to lesser amounts of air borne allergenic and nonallergenic irritants, lesser humidity and other conditions less easily understood, frequently improve the asthmatic condition. Unless the patient has cardiac decompensation the altitude should not harm him.

ANGULATION OF PENIS DUE TO SHORT FRENUM

To the Editor:—A patient complains that on complete erection the head of the penis bends sharply downward interfering seriously with intromission. There is no history of venereal disease. This is not a case of plastic induration of the penis (Peyronie's disease). Examination is otherwise negative. What can be done for this condition?

M.D., New York.

Answer.—An abnormally short and probably fibrous frenum can cause downward angulation of the head of the penis on erection. The treatment for the condition is surgical division of the frenum.

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Q FEVER IN THE UNITED STATES

I. Epidemiologic Studies of an Outbreak Among Stock Handlers and Slaughterhouse Workers

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Austin, Texas

During the month of March 1946 there occurred in Amarillo, Texas, an explosive outbreak of an acute febrile illness which has since been identified as Q fever. The other papers in this series will give the details of the clinical features observed in the cases and the evidence on which the diagnosis of Q fever depends. It is the purpose of this report to give the background of the outbreak with descriptions of the industries involved as well as the sequence of events pertinent to the epidemiologic investigations.

Amarillo is a city of about 70,000 inhabitants located near the center of the Texas panhandle. It is surrounded by country well suited to the raising of livestock and thereby has become a center for this industry. Since the city is situated at the junction of several large railroads by which cattle are shipped to the east, a feeder station has been established there for cattle in transit. The owners of this stockyard which serves as the feeder station also own a livestock auction company, one of the largest in the United States. Nearby, under entirely separate ownership and management, is a packing plant where livestock are killed and dressed for the local market.

All the cases of Q fever which occurred during the explosive outbreak in March were among the employees of these three places or those associated with the handling of the livestock. Three cases occurred in a train crew of 3 occupied in switching cattle trains in and out of the stockyards. Three cases occurred in 4 brand inspectors employed by the Southwestern Cattlemen's Association. They inspected the brands on cattle being sold at auction and occupied a small office in the stockyards. Fifteen cases occurred among 22 employees of the stockyard, 3 cases occurred among 10 regular employees of the auction sales company, and there were 31 cases among 97 employees of the packing plant. There was, then, a total of 55 cases of Q fever among 136 people exposed, an attack rate of 40 per cent.

As the epidemiologic investigations were made from four to six weeks after the outbreak, it was decided to use the employers' absentee records to establish approximate dates of onset for those sufficiently ill to require time off from work. The 15 cases at the stockyard occurred between March 7 and 29, 50 per cent of the cases occurring on or before March 10. The 31 cases at the packing plant occurred between March 10 and 19, with 50 per cent on or before March 14. The cases in the employees of the auction company and those in the members of the train crew occurred about the same time as the cases in the employees of the stockyard.

All the stockyard employees except 1 were engaged in loading and unloading livestock from railroad cars and trucks and in feeding and watering them while they were in the pens of the yard. The 1 exception was a woman bookkeeper in the stockyard office which was alongside the loading docks and in the midst of the pens. She and 14 men employees had Q fever.

The train crews bring the cars to the loading dock and often stand there while cattle are loaded or unloaded. They also spend considerable time in the stockyard office, where there is a stove and a soft drink dispenser. The brand inspectors occupy an office in the same building but work in the pens. Frequently it is necessary for them to clip the hair of cattle in order to see the brands properly.

The auction sales company office is less than 100 yards from the office of the stockyards. The space between is filled with innumerable pens for cattle. The livestock auctions are held on Monday and Tuesday of each week. There are only 10 regular employees, but on sales days between 80 and 100 people are employed, most of them as handlers of the cattle to be sold, the remainder as clerical help and auctioneers. On a usual sale day between 2,000 and 3,000 head of cattle are sold at auction, each animal being driven around a small ring before a crude amphitheater, in which the prospective purchasers are seated. For the most part, the cattle being sold are trucked in the evening before or the morning of the sale; occasionally some arrive by train. While in the pens they are fed and watered by the employees of the stockyard, as well as by some of the regular employees of the sales company. Two of these latter had mild illnesses; the third case among the sales company employees, which was also mild, occurred in a woman bookkeeper.

The packing plant lies about half a mile from the buildings and pens of the stockyards and sales company. It is composed of the main building of three stories and a one story office wing. There are many pens for stock along one side of the grounds connected with the killing room in the main building by an open cattle chute. In the month preceding and during the outbreak there were 18 employees on the killing floor primarily engaged in the killing, skinning and dressing of cattle and hogs.

From the Division of Infectious Diseases, National Institute of Health (Drs. Topping and Shepard) and Director of Laboratories, Texas State Health Department (Dr. Irons).

In 12 of these 18 men Q fever developed. There were 3 men employed in the boning department. Their job consists in cutting the meat from the skulls of cattle and hogs. Q fever developed in all 3, and 1 of them died. Three men were employed in the tankage department which opens onto the killing room, where they frequently work in the event of illness of the regular employees They handle the remains of the carcasses and process them into tankage. Two of these 3 men acquired Q fever. Five men were employed in the curing department, which is a large room in the basement directly under the killing room and connected with it by way of an open chute. The hides are stripped from the freshly killed animals and dropped through this open chute from the killing floor. The men in the curing department then stretch them on piles of hides and place the curing materials on them. Three of the 5 men employed in this department contracted Q fever. Eighteen persons, 10 women and 8 men, are employed in the sausage department. The sausage is of various types and is made from both beef and pork. The men do most of the handling of the raw meat in sausage preparation, and most of the women are occupied in the handling after the sausage has been placed in the casings. In 5 of the men in this department Q fever developed, and 1 of them died. There were no cases among the women.

Summary of Number and Occupation of Employees and Incidence of Q Fever at the Packing Company

Department	No of Employees	No of Cases of Q Fever
Killing floor	18	12
Boning	3	3
Lard	1	1
Tankage	3	2
Curing	5	3
Sausage	18	5
Upkeep	9	1
Cooler and bacon	5	0
Buyer	2	0
Delivery	15	2
Office	18	2
Totals	97	31

The 1 man employed in the lard department also doubled frequently on the killing floor. He contracted Q fever. Of 9 employees having to do with upkeep, such as engineers and carpenters, only 1 had the disease. He was a yardman who took care of the stock in the pens and drove them up the chute to the killing floor. In neither of the 2 cattle buyers did the disease develop; this was also true of the 5 employees engaged in the preparation of bacon or working in the pork cooler. Among 18 employees in the offices there were only 2 cases, both in workers who handled fresh meat for delivery to consumers' trucks. Of 15 plant delivery men, only 2 contracted the disease. The accompanying table summarizes, by occupation, the number of employees at the packing company as well as the cases of Q fever.

In reviewing the experience at the packing company it will be noted that the disease primarily affected those engaged in killing the animals and handling the freshly killed meat. If the 8 men who worked in the sausage department are added to the first five categories in the summarization table, we see that of 38 employees there were 26 cases, an attack rate of 68 per cent. The remainder of the employees, including the 10 women in the sausage department, total 59 with only 5 cases of Q fever, an attack rate of only 8 per cent. These 5 also had rather close contact with the animals or their products.

The slaughtering records for the packing company revealed that from February 15 to March 22 only one lot of sheep was killed, and this was a small group of 18, on March 9. The first case of Q fever here was on March 10.

Since the incubation period for Q fever is thought to be fourteen to twenty-six days, the sheep obviously were not involved in the beginning of the epidemic. Large numbers of hogs were killed during the same period, but the companies' records indicated that these were purchased in lots of 1 to 20 from individual farmers who truck the hogs into the packing plant. At no time were any of these hogs in the pens of the stockyards, nor did they go through the sales company. Therefore these hogs could have been the cause of the outbreak of Q fever among the packing plant employees but certainly were not the cause of the outbreak among the employees of the other two companies.

During the period February 15 to March 22 many cattle were slaughtered. Some were purchased from individuals, but most were purchased from one or the other of the two livestock auction companies in the city. More than half the cattle purchased during this period had been purchased through the sales company in whose employees Q fever had occurred. The other auction company had had no cases among its help as far as could be determined and therefore was dismissed from further consideration.

By checking the records of the sales company it was found that with the exception of one lot the cattle were trucked into the pens either the evening before or the morning of the sales. The one lot that was the exception consisted of 41 white faced heifers that were shipped into Amarillo, Texas, by rail and were unloaded at the stockyard on February 23. They went through the auction ring of the sales company on February 25, were delivered to the packing plant on the morning of February 26 and were slaughtered the same day. This single lot of 41 cattle fulfilled the necessary requirements of having arrived by rail, of having spent several days in the pens of the stockyard, of having been sold through the sales company and, finally, of having been slaughtered and processed at the nearby packing plant. The time interval between reception of this lot of cattle in the stockyard (February 23) and the date on which 50 per cent of the cases of Q fever among stockyard employees occurred (March 10) is sixteen days. The time interval between the date (February 26) the cattle were slaughtered and processing begun at the packing plant and the date (March 14) on which 50 per cent of the cases among packing plant employees occurred is seventeen days. These agree well with the fourteen to twenty-six day incubation period thought to exist in Q fever.

Nothing unusual was found on further investigation of these 41 head of cattle. They were approximately yearlings when slaughtered. They, together with other cattle, had been purchased in November 1945 from around Portales and Clovis, N. Mex., and Wheeler, Texas. They had grazed on a ranch near Bovina, Texas, from November 1945 until Feb. 22, 1946, when they had been shipped by rail to Amarillo for sale. No history of illness could be elicited. This is not an unusual history of frequent sales and movement of cattle in Texas. From the same ranch and same lot of cattle 171 steers had been shipped to Colorado on February 26. They were unloaded, fed and watered but then reloaded at the stockyards in Amarillo while in transit to Colorado.

In search of a history of possible vectors on the cattle coming into the packing plant in Amarillo, we were told by many that the presence of ticks on the cattle in that vicinity was extremely rare. On examination of many cattle in the yards, no ticks were found during the early part of May 1946. Rats were trapped both at the packing plant and the stockyards, but nothing unusual was noted either in the gross pathology or the ectoparasites found on the rats. Eleven samples of serums from the rats had no agglutinins for Rickettsia burneti.

COMMENT

In the analysis of the data several interesting inferences can be drawn. First, even though the employees of the stockyards, sales company and packing plant had for the most part been long engaged in their respective occupations, they as a group did not exhibit immunity to Q fever. It might be inferred that this outbreak represents their first effective exposure to the disease. Second, since no evidence was obtained implicating arthropods and since there was no evidence of spread from person to person, the mode of infection is in doubt. In the packing plant the handling of freshly killed meat certainly carried with it a high risk of infection. There the outbreak was explosive, since all 31 cases occurred within a nine day period. This leads one to the assumption that the infectious agent did not long remain in the packing company; although there were still persons who were susceptible, more cases did not occur after the nine days. The situation in the stockyards, however, was different. Here the risk involved every one exposed to living cattle, and although the first case among these employees occurred three days before the first case at the packing company, the last case occurred ten days after the outbreak at the packing company was over. Therefore, it would seem that the infectious agent was present in the stockyards for a considerable period. It may have been in the dust, as was suggested in one laboratory outbreak,[1] and it may have gotten there from the excreta of the cattle. The rickettsia of Q fever has been isolated from the urine of guinea pigs for considerable periods of time subsequent to infection,[2] and R. burneti is known to be resistant to many agents which are lethal for most micro-organisms.[3] Third, it would seem that cattle can be infectious for stock handlers even though the cattle themselves do not appear ill or exhibit any remarkable gross pathologic conditions during processing.

SUMMARY

An outbreak of Q fever occurred in stock handlers and slaughterhouse workers in Amarillo, Texas, in 1946. There were 55 cases and 2 deaths among 136 employees of three establishments, an attack rate of 40 per cent. The epidemiologic investigations revealed that cattle were probably the source of the human infections in this particular outbreak.

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[1] Hornibrook, J. W., and Nelson, K. R.: An Institutional Outbreak of Pneumonitis: I. Epidemiological and Clinical Studies, Pub. Health Rep. **55**: 1936-1944, 1940. Dyer, R. E.; Topping, N. H., and Bengtson, I. A.: An Institutional Outbreak of Pneumonitis: II. Isolation and Identification of Causative Agent, ibid. **55**: 1945-1954, 1940.

[2] Parker, R. R., and Steinhaus, E. A.: American and Australian Q Fevers: Persistence of the Infectious Agents in Guinea Pig Tissues After Defervescence, Pub. Health Rep. **58**: 523-527, 1943.

[3] Huebner, R. J.: Unpublished data.

Q FEVER IN THE UNITED STATES

II. Clinical Data on an Outbreak Among Stock Handlers and Slaughterhouse Workers

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Austin, Texas
and
JOHN M. HOOPER, M.D.
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In March 1946 there occurred at Amarillo, Texas, an explosive outbreak of acute febrile illnesses which was shown [1] to be closely related to or identical with Q fever. The other papers in this series deal with the epidemiologic, serologic and rickettsial data on this outbreak. It is the purpose of this report to present some of the clinical features observed in these cases. The clinical data were obtained mainly from the 18 hospitalized patients since the remaining 37 patients treated at home, although the cases were similar, were not so completely observed. While several of those who remained at home were seriously ill, other employees contracted mild, influenza-like illnesses and in 1 or 2 instances remained at work during the illness. Six instances of probable subclinical or inapparent infection were uncovered through serologic tests for Q fever on workers presumably exposed to the disease but without a history of subsequent illness.

The onset in nearly all cases was fairly sudden but usually was not severe. In an occasional case the onset was somewhat insidious. The illness was usually ushered in by constitutional symptoms, with few if any symptoms referable to the respiratory tract. Two patients complained of troublesome and persistent nasal discharge, possibly resulting from recurrence of sinusitis. The onset usually was characterized by headache, chilly sensations, general malaise and, sometimes, nausea or vomiting. Frequently there was a latent period of from one to three days following the onset, and in some instances the patient returned to work or continued to work while feeling ill.

Severe and persistent headache was a common complaint, which developed early in the illness. Occasional patients also complained of nuchal pain. Other common complaints on admission to the hospital were feverishness, weakness, anorexia, soreness of the chest, generalized bodily aches and pains and chilly sensations. Frank rigors were experienced by 5 patients. Some patients experienced nausea and vomiting. Diarrhea and other evidence of gastrointestinal infection were uncommon. During the period of hospitalization drenching sweats were frequent and insomnia also was troublesome. In 5 of the most severe infections the patients became drowsy or even stuporous.

Several patients contracted a slight cough, which generally was nonproductive or productive of a small amount of thick, tenacious, white or occasionally blood-tinged mucus. More than half of the patients experienced thoracic pain in the substernal area or on the side of the demonstrated lesion of the lung; the pain was at times referred to the lower ribs and back. The pain in the chest generally was more of a neuralgic than of a pleuritic character and usually was not associated with respiratory difficulties.

Director of Laboratories, Texas State Department of Health (Dr. Irons) and Director of Public Health Department, Amarillo (Dr. Hooper).

[1] Irons, J. V.; Topping, N. H.; Shepard, C. C., and Cox, H. R.: Outbreak of "Q" Fever in the United States, Pub. Health Rep. **61**: 784-785, 1946.

Abnormal findings on physical examination in most instances were particularly negligible at the time of hospitalization, even though illness in some instances had been present for several days and the patients were moderately toxic, usually with moderately high fever on admission.

The respiratory rates generally were not unusual and averaged about 24 to the minute. With few exceptions the patients were without respiratory difficulty, and with only 1 or 2 exceptions there were none of the obvious symptoms of pneumonia, such as dyspnea, inspiratory-respiratory grunt or cough with typical rusty or blood-streaked sputum. Mild cyanosis was observed in 4 patients who were without evidence of respiratory difficulty. On admission the average pulse rate was 94 beats per minute and the average temperature was 101.5 F. Temperatures on admission varied from 97 to 105 F. The pulse rate, although elevated, frequently was somewhat low in proportion to the fever and did not always parallel the temperature curve. On admission the 2 cases which terminated fatally exhibited the highest temperatures and pulse rates in the series. In most instances the duration of fever was from one to two weeks.

Roentgenologic examination of the chest was the main source of evidence of pulmonary lesions. The lesions frequently were the patchy type seen in bronchopneumonia. A soft, diffuse type of infiltration, singular or multiple and usually lacking the uniform density observed in lobar pneumonia was seen on the roentgenograms. The lower lobe of the left lung perhaps was more often involved than the lower lobe of the right. More than one lobe seldom was involved. There apparently was little correlation between the severity of illness and the degree of pulmonary involvement. For the most part roentgenologists reported the films as showing atypical or beginning pneumonia or pneumonitis. Since the physical signs of lung involvement were minimal, without roentgen ray examination several patients hardly would have been seriously considered to have suffered from a pneumonic process. In view of the common complaint of pain in the chest in some degree by nonhospitalized patients, it seems certain that pulmonary or pleural involvement occurred in the great majority of cases in this outbreak.

A summary of the clinical data on hospitalized patients is shown in the accompanying table, and the roentgenologic data and the physical signs are given later in the form of brief case reports.

The rash frequently noted in other rickettsial diseases was minimal or absent. Mention was made in 2 or 3 instances of a few small spots of doubtful significance on the ankles or chest. In no instance was there pronounced jaundice. The spleen was recorded as palpable only in 1 case. Enlargement of lymph glands was not noticed in any case.

For the most part the red blood cell counts and hemoglobin determinations were within normal range. In all except 2 or 3 patients the total white cell count at the time of admission to the hospital was within normal limits. In cases in which the count was elevated as the illness progressed the count showed a decrease or no increased elevation. The differential count showed an average of more than 70 per cent neutrophils in all instances. Blood for culture was taken on one or more occasions from 4 or 5 patients. On two or three occasions a diphtheroid of no significance was encountered, otherwise the cultures were reported as bacteriologically negative. Agglutination tests, with Eberthella typhosa, Salmonella paratyphi A, Salmonella paratyphi B, Brucella abortus, Proteus OX 19 and Pasteurella tularensis as antigens, were performed on serums from 7 hospitalized and several nonhospitalized patients; the results were essentially negative.

Urinalyses were negative except for occasional transient mild albuminuria during the febrile period. Typical pneumococci were not found in sputum from 5 patients. Mice injected with sputum from 3 patients were reported negative for pneumococci. Staphylococci, streptococci and similar organisms were found.

Clinical Data on Eighteen Patients Hospitalized with Q Fever

			On Admission								
Cases *	Date of Onset, 1946	Date Stopped Work, 1946	Temperature, F	Pulse Rate	Respiratory Rate	Total Duration Fever, Days	Date of Defervescence, 1946	Symptoms at Onset	Cough	Expectoration	X Ray
A R W	3/16	3/19	103.0	85	26	15	4/ 3	Headache, malaise	++	++	Atypical pneumonia
E M	3/ 9	3/11	99.0	84	22	10	3/20	Headache, malaise and nausea	+	+	Atypical pneumonia
E B J	3/20	3/20	103.0	90	22	43	5/ 24†	Headache	±	+	Atypical pneumonia
M E S	3/ 9	3/11	101.0	92	24	9	3/19	Headache	—	—	
W H L	3/ 9	3/10	102.0	90	24	7	3/16	Headache, malaise	—	—	
N H S	3/17	3/18	102.6	100	24	12	3/30	Headache, malaise	+	—	Atypical pneumonia
L M O	3/16	3/16	99.0	100	25	5	3/22	Headache, chills and nausea	+	—	Beginning pneumonia
A B	3/ 9	3/11	101.0	92	22	7	3/17	Headache, malaise	+	—	Atypical pneumonia
L W	3/17	3/18	101.5	85	24	8	3/26	Headache, chills and sweats	+	+	
D W M	3/14	3/15	105.0	120	34	6+ died	3/21	Headache, malaise	++	++	Pneumonia
E L M	3/ 9	3/10	103.6	104	18	10+ died	3/19	Headache	+	—	
S T O	3/12	3/13	102.4	95	32	11	3/25	Malaise, nausea	+	+	Central pneumonia
L E S	3/16	3/19	100.5	78	24	7	3/26	Cold, malaise	+	—	Atypical pneumonia
W A S	3/15	3/16	102.8	100	24	9	3/25	Nausea, malaise	+	±	Atypical pneumonia
E M H	3/21	3/22	97.0	85	22	19	4/ 9	Malaise, chills and nausea	+	+	
T E M	3/17	3/19	100.0	85	20	13	4/ 1	Headache, malaise	+	—	No consolidation, pleurisy
E L W	3/13	3/14				15—	3/29	Nausea, headache	+	+	Pneumonitis
R L R	3/15	3/15	103.4	100	24	7	3/22	Nausea, headache	+	—	No consolidation

* All cases listed occurred in white males.
† Temperature was normal March 27 to 29, the course of the disease was complicated by pleural effusion later.

Complement fixation tests for typhus and spotted fever also were performed on late convalescent serums from several patients. In each instance the results of the tests were essentially negative. Several late convalescent serums tested for cold agglutinins[2] of atypical pneumonia gave essentially negative results. With serums obtained in convalescence or a few weeks after recovery, complement fixation and rickettsial agglutination tests almost without exception were positive for Q fever.

The usual supportive treatment was followed with hospitalized patients. In addition the sulfonamide compounds and penicillin were employed, but it was not believed that these drugs, either alone or in combination, exerted any appreciable effect on the course of the illness. Certainly the fever did not show the prompt and decided diminution which might be expected with successful therapy of pneumonia. Para-aminobenzoic acid (PABA), which has been reported to be beneficial in the treatment of other rickettsial diseases,[3] was not tried.

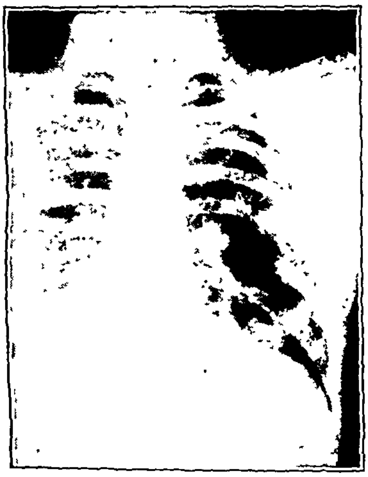
Fig. 1 (E. M.).—Small area of increased density in the lower lobe of the left lung.

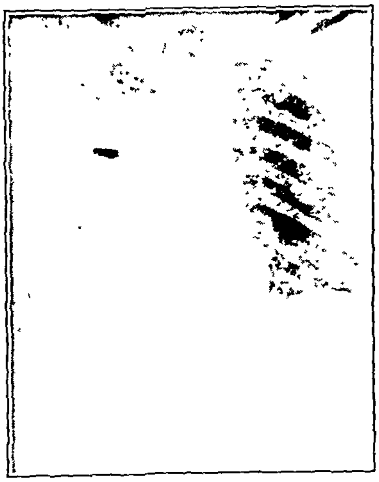
Fig. 2 (D. W. M.).—Areas of increased density involving both lobes of the left lung.

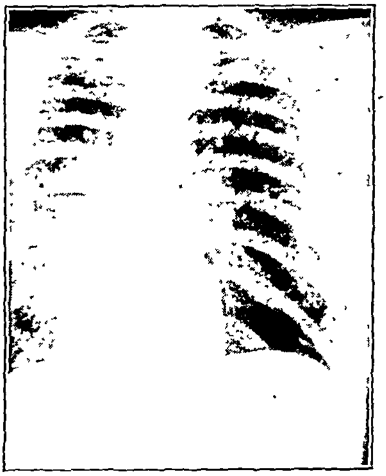
Fig. 3 (S. T .O.).—Diffuse area of opacity in the upper part of the lower lobe of the left lung.

Most patients made an uneventful recovery. In the less severe illnesses the patients were up and ready to return to work shortly after the temperature had returned to normal. In several instances of more severe infection there was a loss in weight of 15 to 20 pounds (7 to 9 Kg.). At least 3 patients still complained of slight cough and slight pain in the chest several days after their return to work. In 3 patients the illness was complicated and in 1 instance much prolonged by pleurisy and effusion. In 2 patients there was a late complaint of arthritis which involved the wrists, fingers or knees. A painful knee with some swelling developed, apparently as a late complication, in 1 otherwise relatively mild uncomplicated case. In 2 cases a well defined unilateral orchitis and slight epididymitis developed late in the course of illness. Cultures in these 2 cases were negative for Neisseria gonorrheae.

Two deaths in brothers occurred in the series. One of these cases displayed definite evidence of pneumonia. Unfortunately, autopsies were not performed in these 2 fatal cases.

REPORT OF CASES

The physical signs and roentgenologic findings of the hospitalized patients are summarized in the following case reports.

A. R. W.—Bronchovesicular breathing and increased breath sounds; rales heard. March 22, 1946—Roentgenogram: area of increased density in upper and middle lobes of the right lung. March 29—Area of increased density in the right lung had decreased. Impression: atypical pneumonia.

E. M.—Area of consolidation in lower lobe of the left lung with soft peribronchial thickening in both lungs and scattered soft spotty infiltration. March 14—Roentgenogram (fig. 1): small area of increased density, lower lobe of the left lung. Impression: atypical pneumonia.

E. B. J.—Essentially negative. March 22—Roentgenogram: pneumonitis in the lower lobe of the right lung. April 17—Breath sounds in right axilla frankly tubular; no rales. Roentgenogram shows area of increased density, lower lobe of the right lung. Impression: atypical pneumonia; probably complicated with pleural effusion.

N. H. S.—Bronchovesicular breathing; a few fine rales. March 23—Roentgenogram: peribronchial thickening in both lungs; a diffuse area of opacity, upper part of lower lobe of the left lung. Impression: atypical pneumonia.

L. M. C.—Essentially negative, except for a few fine rales. March 18—Roentgenogram: slight diffuse area of increased density, lower lobe of the left lung; possible beginning pneumonia.

A. B.—A few rales heard in both lungs. Roentgenogram: increased area of density, perhaps more pronounced in lower lobe of the left lung. Impression: primary atypical pneumonia.

D. W. M.—Patient in respiratory distress with rapid shallow breathing; many rales heard. March 19—Roentgenogram: areas of increased density involving both the upper and lower lobes of the left lung (fig. 2). Impression: pneumonia.

S. T. O.—Occasional rales and bronchovesicular breathing. March 21—Roentgenogram: diffuse area of opacity, upper part of lower lobe of the left lung (fig. 3). Impression: central pneumonia.

L. E. S.—Occasional central rales with bronchial breathing throughout. March 22—Roentgenogram: large area of increased density, lower lobe of the right lung (fig. 4). Impression: atypical pneumonia.

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[2] Cold Hemagglutinins in Primary Atypical Pneumonia and Other Respiratory Infections, Commission on Acute Respiratory Diseases, Am. J. M. Sc. **208**: 742-750, 1944.

[3] Yeomans, A.; Snyder, J. C.; Murray, E. S.; Zarafonetis, C. J. D., and Ecke, R. S.: The Therapeutic Effect of Para-Aminobenzoic Acid in Louse Borne Typhus Fever, J. A. M. A. **126**: 349-356 (Oct. 7) 1944; correction, ibid. **126**: 581 (Oct. 28); 782 (Nov. 18) 1944. Tierney, N. A.: Effect of Para-Aminobenzoic Acid in Tsutsugamushi Disease, ibid. **131**: 280-285 (May 25) 1946. Flinn, L. B.; Howard, J. W.; Todd, C. W., and Scott, E. G.: Para-Aminobenzoic Acid Treatment of Rocky Mountain Spotted Fever, ibid. **132**: 911-915 (Dec. 14) 1946.

W. A. S.—Occasional rales; bronchial breathing throughout both lungs. March 21—Roentgenogram: large area of increased density involving almost the entire lower lobe of the left lung. Impression: atypical pneumonia.

T. E. M.—Essentially negative; no rales. March 22—Roentgenogram: no demonstrable pneumonia; slight thickening of pleura, upper lobe of the right lung (fig. 5). Impression: pleurisy.

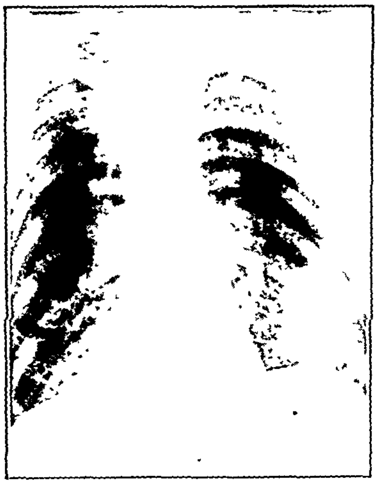

Fig. 4 (L. E. S.).—Large area of increased density in the lower lobe of the right lung.

E. L. W.—Occasional rales in right side of chest. March 27—Roentgenogram: pneumonitis in right lower lobe of lung at costophrenic angle. April 2—pneumonitis in right lower lobe of lung, with probable pleural effusion.

R. L. R.—Bronchovesicular breathing; occasional rales. Roentgenogram: no consolidation. Impression: acute bronchitis

COMMENT

The clinical features of an explosive outbreak of Q fever which occurred among stock handlers and slaughterhouse workers at Amarillo, Texas, have been described. The cases were similar except for wide variations in the severity of illness, which ranged from mild influenza-like attacks to grave illnesses with 2 deaths. The most outstanding observations were rather abrupt onset associated with frontal headache, chilly sensations and general malaise, high fever of five to fifteen days' duration, essentially normal white blood cell count, roentgenologic evidence of pulmonary lesions with minimal symptoms and physical signs referable to the respiratory tract and comparatively rapid convalescence. The cutaneous manifestations which are characteristic features of other known rickettsial diseases were not observed. Except for frequent evidence of pulmonary lesions, these cases seemed similar to those originally described in Australia by Derrick.[4] Hornibrook and Nelson[5] first called attention to evidence of pulmonary lesions in an institutional outbreak of Q fever at Washington, D. C. Roentgenologic examination showed the occurrence of pulmonary lesions in varying degrees in other recent outbreaks.[6]

In the absence of evidence of lesions of the lungs Q fever is not readily differentiated from the early stages of many acute febrile conditions such as typhoid, typhus and brucellosis. With recognition of pulmonary or pleural involvement, the problem of differentiation changes. In the Amarillo cases primary atypical pneumonia was excluded because of the acute onset, lack of symptoms referable to the upper part of the respiratory tract, comparatively rapid convalescence and lack of cold agglutinins in convalescent serums. Lack of history of contact with birds seemed to rule out the probability of psittacosis. While the clinical and epidemiologic observations were suggestive of Q fever, the diagnosis was established primarily on the basis of laboratory procedures, with particular reference to increasing complement fixation titers during convalescence and after recovery. Sulfonamide and penicillin therapy was ineffective. Para-aminobenzoic acid therapy was not tried.

The Amarillo epidemic of Q fever represents the first sizable outbreak of this disease acquired naturally in the United States. Previous reports[7] had suggested the natural occurrence of Q fever in this country. While a sizable outbreak of Q fever[6b] occurred among troops at Camp Patrick Henry, Virginia, in the spring of 1945, it was quite clear that the infections had been acquired in Italy. It is becoming increasingly clear that Q fever must require consideration in the differentiation of atypical and nonbacterial pneumonia and undiagnosed acute febrile illnesses. While the identification of Q fever is dependent on laboratory procedures, this disease should be suspected when clinical, roentgenographic or epidemiologic features of Q fever occur.

CONCLUSIONS

The clinical and roentgenographic aspects of a naturally occurring outbreak of 55 cases of Q fever is described. Eighteen hospitalized patients were studied, of whom the majority showed pulmonary lesions.

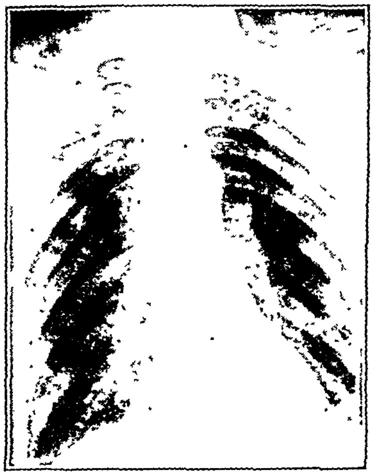

Fig. 5 (T. E. M.).—Slight thickening of pleura, upper lobe of the right lung.

The cases as a group presented a syndrome characterized by fever, headache, constitutional symptoms and minimal signs or symptoms referable to the respiratory tract.

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[4] Derrick, E. H.: "Q" Fever, a New Fever Entity Clinical Features, Diagnosis and Laboratory Investigation, M. J. Australia 2: 281-299, 1937.

[5] Hornibrook, J. W., and Nelson, K. R.: An Institutional Outbreak of Pneumonitis: I. Epidemiological and Clinical Studies, Pub. Health Rep. 55: 1936-1944, 1940.

[6] (a) A Laboratory Outbreak of "Q" Fever Caused by the Balkan Grippe Strain of Rickettsia Burneti, Commission on Acute Respiratory Diseases, Am. J. Hyg. 44: 123-157, [illegible] d Ragan, C. A.: "Q" Fever in the Mediterrane[illegible] ccurrence in Allied Troops; I. Clinical Features [illegible] 22, 1946. (b) Feinstein, M.; Yesner, R., and [illegible] of "Q" Fever Among Troops Returning from Italy in the Spring of 1945: I. *Clinical Aspects of* the Epidemic at Camp Patrick Henry, Virginia, ibid. 44: 72-87, 1946. (c) Cheney, G., and Geib, W. A.: The Identification of "Q" Fever in Panama, ibid. 44: 158-172, 1946.

[7] Cox, H. R.: Rickettsia Diaporica and American "Q" Fever, Am. J. Trop. Med. 20: 463-469, 1940. Hesdorffer, M. B., and Duffalo, J. A.: *American "Q" Fever: Report of a Probable Case, J. A. M. A.* 116: 1901-1902 (April 26) 1941. Hornibrook and Nelson.[5]

Q FEVER IN THE UNITED STATES

III. Serologic Observations in an Outbreak Among Stock Handlers and Slaughterhouse Workers

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DON M. WOLFE, Ph.D.
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The preceding articles in this series cover the clinical and epidemiologic aspects of the outbreak of Q fever at Amarillo, Texas, in March 1946. The present report describes the results of complement fixation tests for Q fever obtained with serums from patients infected in this outbreak. The first significant indication that the Amarillo outbreak of illnesses was caused by the strain of rickettsia responsible for Q fever came from complement fixation tests done on convalescent serums.

Burnet and Freeman,[1] Cox [2] and Dyer, Topping and Bengtson [3] utilized direct rickettsial agglutination, while Bengtson [4] first applied the complement fixation technic using yolk sac antigen in serologic tests for Q fever. With serums obtained from patients infected in the Amarillo outbreak, a modified Kolmer, quantitative complement fixation procedure with overnight ice-box fixation was employed. The Q fever antigen [5] was prepared from a strain isolated in 1935 from Dermacentor andersoni in Montana—the American Nine Mile strain.[6] The antigen used was diluted 1:4 or 1:8. Complement was titrated in the presence of antigen, and 2 units of complement were employed in all tests. Tubes containing inactivated serum in serial dilution, antigen and complement were placed in the chillroom for about eighteen hours. The next morning the hemolytic system, consisting of 2 units of amboceptor and 2 per cent washed sheep cells, was added, and the tubes were incubated in 37 C. water bath. Tests were recorded as soon as the serum and antigen controls showed complete hemolysis. Positive and negative serum controls were included in each series of tests. Results could be duplicated without much variation in serum titers. Whenever possible serial blood samples obtained from the same person were tested simultaneously. Serologic confirmation of the diagnosis of Q fever was obtained with the majority of suspect cases, as shown in table 2.

Table 3 shows that significant complement fixation titers appeared during the second week after the onset of illness. However, in some cases the highest titers were not reached before the fourth or fifth week after the onset of illness. In most instances high titers were maintained at least for a few weeks.

The results obtained with paired serums from several patients are shown in table 1. The increased titers during convalescence and after recovery from illness are noticeable in most instances when the first bleeding was not too late. The relatively early samples of serum from patients A. R. W., N. H. S., S. T. O., E. M. H. and D. W. M. gave negative results.

The specificity of the complement fixation test for Q fever was shown by employing several of the same serums in identical tests except that endemic typhus and spotted fever antigens, respectively, were used in place of the Q fever antigen. None of the Amarillo

Table 1.—*Results of Complement-Fixation Tests for Q Fever with Paired Serums from Several Cases*

Serum of Patient	Date of Onset	Date of Bleeding	Serum Dilutions Plus Antigen (American Q Fever Strain)									
			1:20	1:40	1:80	1:160	1:320	1:640	1:1,280	1:2,560	1:5,120	1:10,240
A. C. B.	3/15	3/25	4	4	4	4	—	—	..	..	..	..
		4/25	..	4	4	4	4	4	—	—	..	..
C. E. D.	3/10	3/26	..	4	4	4	4	4	4	2	—	—
		4/25	..	4	4	4	4	4	4	4	2	—
P. G. G.	3/ 9	3/25	..	4	4	4	1	—	..	..	..	..
		4/25	..	4	4	4	4	4	—	—	..	..
C. W.	3/15	3/25	..	4	4	2	—	—	..	..	..	..
		5/ 2	..	4	4	4	4	—	—	..	..	..
A. R. W.	3/16	3/24	—	—	—	—	..	..	..	..	..	..
		4/ 1	4	4	4	4	4	2	..	..	..	..
N. H. S.	3/17	3/25	—	—	—	—	..	..	..	..	..	..
		5/ 2	4	4	4	4	—	—	..	..	..	..
L. W.	3/17	3/25	4	4	4	—	—	..	..	..	..	..
		4/ 1	4	4	4	4	4	4	—	..	..	..
S. T. O.	3/12	3/20	—	—	—	..	..	..	..	..	..	..
		3/25	4	4	4	—	—	—	..	..	..	..
		5/ 2	4	4	4	4	4	4	4	—	—	—
E. M. H.	3/21	3/25	—	—	—	—	..	..	..	..	..	..
		5/27	4	4	4	4	4	4	4	—	—	—
D. W. M. (died 3/21)	3/14	3/17	—	—	—	—	..	..	..	..	..	..
Controls												
Immune guinea pig serum			4	4	4	4	4	—	..	..	..	..
Negative human serum			—	—	—	—	..	..	..	..	..	..

From the Texas State Health Department (Dr. Irons and Mr. Murphy) and from the Viral and Rickettsial Research Section, Lederle Laboratories, Inc., division of the American Cyanamid Company, Pearl River, N. Y. (Dr. Wolfe).

[1] Burnet, F. M., and Freeman, M.: Experimental Studies on the Virus of Q Fever, M. J. Australia **2:** 299-305, 1937.

[2] Cox, H. R.: Rickettsia Diaporica and American Q Fever, Am. J. Trop. Med. **20:** 463-469, 1940.

[3] Dyer, R. E.; Topping, N. H., and Bengtson, I. A.: An Institutional Outbreak of Pneumonitis: II. Isolation and Identification of Causative Agent, Pub. Health Rep. **55:** 1945-1954, 1940.

[4] Bengtson, I. A.: Complement-Fixation in Q Fever, Proc. Soc. Exper. Biol. & Med. **46:** 665-668, 1941.

[5] The antigen was prepared as follows: Yolk sacs from Q fever (American Nine Mile)-infected embryonated eggs that were living on the sixth day of infection were harvested and held in the frozen state in carbon dioxide snow until ready for processing. The frozen yolk sacs were thawed, weighed and diluted with an equal portion of isotonic solution of sodium chloride by weight containing 0.8 per cent solution of formaldehyde. The mixture was homogenized in a Waring blendor and allowed to inactivate overnight at 4 C.

The above suspension was diluted to a 10 per cent yolk sac content with isotonic solution of sodium chloride and ether-extracted for six hours at 4 C. with four-fifths volume of ether. The aqueous phase was recovered and further treated with a quarter volume of ether overnight at 4 C.

The aqueous phase was recovered and the excess ether removed by evacuation at room temperature. The resulting suspension was then placed

(Footnote 5 continued in next column)

in cellophane bags and concentrated to one third of its volume by perevaporation.

Such an antigen was usually found antigenic in a dilution as high as 1:32 by complement fixation methods and could be used in a dilution of 1:8 or 1:16 for subsequent testing of serums of patients suspected of having Q fever. This antigen did not give cross fixation reactions with serums from guinea pigs convalescent from infection with Rocky Mountain spotted fever, murine or epidemic typhus.

[6] Davis, G. E., and Cox, H. R.: A Filter-Passing Infectious Agent Isolated from Ticks: I. Isolation from Dermacentor Andersoni, Reactions in Animals, and Filtration Experiments, Pub. Health Rep. **53:** 2259-2267, 1938.

serums fixed complement with these antigens, although the antigens reacted in high titers with control serums from patients in known cases of typhus and spotted fever, respectively.

A control group of 14 serums collected at Amarillo in May and June, 1946 gave negative results. These serums were taken from the wives or mothers of 4 patients with Q fever, from 3 employees of a nearby packing company which apparently was not involved in the outbreak, from 4 office workers present at the time of the outbreak but presumably not exposed and from 3 butchers at the packing company who presumably were not exposed because they were employed shortly after the outbreak occurred. With one or two exceptions specimens of serum collected elsewhere gave negative results

TABLE 2—*Distribution of Cases of Q Fever at Amarillo, Texas, March 1946*

	Number of Suspect Serums Tested	Number of Serums with Diagnosis Serologically Confirmed
Packing plant	31	27
Auction company	3	3
Stockyards	21	19
Total	55	49

The occurrence of unrecognized illness or inapparent infection during the March outbreak possibly explains the titers obtained on serums from a small group of presumably exposed persons (table 4).

TABLE 3—*Mean Complement Fixation Titers, by Weeks, After Onset of Illness*

	Week After Onset					
	1	2	3	4 5	6 7	11 15
No of serums	4	15	7	19	14	4
Mean titer . . .	<1 20	>1 80	>1 160	1 320	>1.320	>1 320

COMMENT

The complement fixation test for Q fever was utilized to good advantage in the investigation of the explosive outbreak of illnesses at Amarillo, Texas, in March 1946. From the results obtained it appears that the test is both sensitive and specific. It should be noted, however, that serums fixed complement only near the end of the acute phase of illness or in early convalescence. Our observations suggest that rising titers obtained from tests of serums taken during the first and third weeks after the onset of illness would indicate that the patient had Q fever. In this outbreak of Q fever the complement fixation test was of great assistance in retrospective diagnosis, since high titers persisted at least for a few weeks.

TABLE 4—*Q Fever Complement Fixation Titers on Serums of Persons Presumably Exposed but Not Ill*

Serum	Occupation	Titer	Date
A Ba	Stock handler	1 320	5/2/46
E. G	Sausage maker	1 640	5/2/46
J L	Tankage worker	1 40	5/2/46
D O N.	Stock handler	1 20	5/2/46
R W.	Butcher	1.160	5/2/46
L V	Deliveryman and beef cooler	1 160	5/2/46

It should be emphasized that as a laboratory diagnostic aid the use of killed antigen in serologic tests is preferable to attempts to recover and identify Rickettsia burneti because of the extreme infectiousness of this agent in the laboratory.

Derrick[7] and Cox[2] originally found that the Weil-Felix test, which is of value in the laboratory diagnosis of certain other rickettsial diseases, gives negative results in Q fever. It was noted in a preceding report[8] in this series that all serums failed to react in the Weil-Felix test.

CONCLUSIONS

With serums collected from patients infected in the Amarillo outbreak of Q fever and tested by the complement fixation method it appeared that:

1. Titers were low as a rule during the first week of illness.

2. Subsequently the titers generally reached and maintained high levels at least for a few weeks.

3. The serologic observations indicated that the illnesses were Q fever.

Q FEVER IN THE UNITED STATES

IV. Isolation and Identification of Rickettsias in an Outbreak Among Stock Handlers and Slaughterhouse Workers

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and
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The preceding papers of this series deal with the clinical, epidemiologic and serologic observations concerning an outbreak of Q fever that occurred in 1946 among stock handlers and slaughterhouse workers in Amarillo, Texas. The present report deals with the isolation and identification of the causative agent, Rickettsia burneti[1] (Rickettsia diaporica,[2] Coxiella burneti[3]), from the serums of 2 patients, T. E. M.[4] and R. W.,[5] both white men employed by the Western Stock Yards and the Pinkney Packing Company, respectively.

EXPERIMENTAL

Passage in Dilute Brown Agouti (dba) Mice.—Serum samples obtained from T. E. M. and R W. during the acute phase of their illness on March 22 and 25, respectively, were diluted 1 : 10 with sterile isotonic solution of sodium chloride and inoculated in 0.5 cc. amounts into 4 mice of the dilute brown agouti strain (2 for each serum) by the intraperitoneal route. In none of the mice did there develop clinical signs of illness, nor did they show any abnormal gross pathologic condition when killed seven days later. Nevertheless, 10 per cent suspensions were prepared from their spleen

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[7] Derrick, E H · "Q" Fever, a New Entity Clinical Features, Diagnosis and Laboratory Investigations, M J. Australia **2**: 281-299, 1937

[8] Irons, J V, and Hooper, J M Q Fever in the United States II. Clinical Observations in an Outbreak Among Stock Handlers and Slaughterhouse Workers, THE JOURNAL, this issue, p 815

From the Viral and Rickettsial Research Section, Lederle Laboratories Division, American Cyanamid Company, Pearl River, N. Y. (Dr. Cox and Mr Tesar) and Director of Laboratories, Texas State Health Department (Dr Irons).

[1] Derrick, E H. Rickettsia Burneti—The Cause of "Q" Fever, M J Australia **1**: 14, 1939.

[2] Cox, H R Studies of a Filter-Passing Infectious Agent Isolated from Ticks V. Further Attempts to Cultivate in Cell Free Media; Suggested Classification, Pub Health Rep **54**: 1822-1827, 1939.

[3] Philip, C. B. Nomenclature of the Pathogenic Rickettsia, Am J. Hyg **37**: 301-309, 1943 Steinhaus, E A: Insect Microbiology, Ithaca, N. Y, Comstock Publishing Company, Inc, 1946, pp. 263 and 295

[4] In paper II of this series the case of T. E. M. is reported and illustrated (fig. 5).

[5] In paper III of this series data on R. W. appears in table 4

and brain tissues, and these were inoculated into a second series of the dilute brown agouti strain of mice by the intraperitoneal and intracerebral routes, respectively. After seven days the mice that received spleen tissue intraperitoneally were killed, and their spleens were passed by the intraperitoneal route to a third series of the same strain. Likewise, the mice that received brain tissue intracerebrally were killed and their brains passed by the intracerebral route to a third series.

Results in the Dilute Brown Agouti Strain of Mice.—The R. W. series of mice inoculated intracerebrally with brain passage material was discontinued after the third passage because none of the animals showed any signs of clinical illness or any abnormal gross pathologic conditions when they were killed on the seventh day. Furthermore, negative Q fever[6] complement fixation results were obtained with serum samples derived from the third passage mice just prior to their being killed. The Q fever antigen employed was prepared from a strain isolated in 1935 from Dermacentor andersoni in Montana—American Nine Mile strain.[6]

The R. W. series of mice inoculated intraperitoneally with spleen suspension showed greatly enlarged spleens, similar to those reported for Q fever in mice[6] in both the second and third passages. Rickettsial organisms identical to those described for Q fever[7] were also found in impression slides prepared from the third series mouse spleens stained by Machiavello's method.[8] Furthermore, serum derived from one of the third passage mice gave a positive (4 plus) Q fever complement fixation reaction in a 1:40 dilution (end point not determined).

The T. E. M. series of mice inoculated intracerebrally with brain passage material showed no gross or clinical evidence of Q fever infection until the third transfer, whereupon 1 of the mice showed a typically enlarged spleen. Typical rickettsia-like organisms were readily found in Machiavello-stained impression smears of the spleen, and the serum of this mouse gave a positive (4 plus) Q fever complement fixation reaction in a 1:40 dilution (end point again not determined).

The T. E. M. series of mice inoculated intraperitoneally with spleen suspension showed decidedly enlarged spleens in all three serial passages, beginning with the first transfer. Similarly, typical rickettsial organisms were found in impression slides prepared from spleen tissues of the third transfer.

Passage in Albino Swiss Mice and Guinea Pigs.—Five virus transfers were established from the previously described dilute brown agouti strain of mice to both albino Swiss mice and to guinea pigs. Two transfers were of the R. W. strain, using liver and spleen tissues, respectively, of the third intraperitoneal dilute brown agouti passage. The remaining three transfers were of the T. E. M. strain, these being a liver and spleen tissue passage, respectively, of the second intraperitoneal dilute brown agouti series and a liver tissue transfer of the third intraperitoneal dilute brown agouti series. The infection thus established has been readily maintained in Swiss mice by making transfers with spleen tissue injected intraperitoneally and in guinea pigs by passing blood or spleen tissue intraperitoneally or subcutaneously.

Results in Albino Swiss Mice and Guinea Pigs.—The gross pathology of the infection in Swiss mice and in guinea pigs is identical in all respects with that previously described for American Q fever in these animals.[6] Likewise typical rickettsias[7b] may be readily demonstrated in the spleen tissue of mice and guinea pigs as well as in the inflammatory exudate of the skin of guinea pigs injected by the subcutaneous route. In addition, the serums of guinea pigs convalescent from infection with either the R. W. or T. E. M. strain give positive complement fixation with Q fever antigen in dilutions as high as 1:2,048.

Cultivation in Developing Chick Embryos.—Both the R. W. and T. E. M. strains have been readily cultivated in series in the yolk sac tissue of the developing chick embryo.[9] The growth and staining properties are characteristic of those described for Q fever.[10]

COMMENT

A rickettsial agent apparently identical in all criteria to R. burneti, the causative agent of Q fever, was isolated from the serums of 2 naturally infected human subjects. The literature indicates that the guinea pig generally has been used for isolating R. burneti from human blood.[11] The work reported herein shows that the dilute brown agouti strain of mouse may be employed in place of the guinea pig with satisfactory results. This strain of mouse has been found to be of value in studies with murine typhus,[12] dengue fever,[13] Lymphogranuloma venereum[14] and Colorado tick fever.[15]

The recovery of Q fever rickettsias from 2 of the patients substantiates the epidemiologic, clinical and serologic observations made on the Amarillo epidemic.

SUMMARY

The isolation and identification of strains of Q fever from the serums of 2 naturally infected human subjects is described. The recovery of Rickettsia burneti in these cases substantiates the observations reported in the preceding papers of this series.

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THE KNOWLEDGE OF HUMAN VIRUS INFECTIONS OF ANIMAL ORIGIN

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Present day information on the viral agents is in a state of flux; changes in fact and in point of view occur in kaleidoscopic fashion, and there is considerable hesitancy to make final conclusions. Although numerous papers have been published, they are scattered throughout scientific journals and are not always readily accessible to the clinician. A brief summary of the knowledge of virus diseases having their origin in the animal kingdom therefore seems warranted. From the increasing number of diseases which belong to this group, rabies, psittacosis and arthropod-borne encephalitides were selected for presentation in this paper because of the peculiar action of the respective inciting agents on children.

RABIES

That rabies is a major public health problem is evidenced by the continuing demand for information and advice concerning its diagnosis and postinfectional treatment with vaccine as well as the planning of effective rabies-control programs. The knowledge that rabies is invariably fatal once it has developed makes it one of the most feared and notorious of diseases.

The usual mode of transmission from the rabid animal is by means of a bite, the resultant wound being contaminated with infected saliva during the act of biting. However, many consultations on the necessity of rabies treatment for human beings mention the occurrence of a scratch on the bare skin rather than a bite. Several authentic cases are recorded of rabies which developed after the hands had been licked by an infected animal. Babès and Vesilu,[1] in their experiments, failed to cause infection when street virus was rubbed into superficially produced scratches on human subjects. Pawan [2] found the saliva of bovines, horses and human beings suffering from paralytic rabies highly infectious to rabbits. He also comments that although a large number of persons have scooped up saliva from the mouth of rabid animals with their hands, on which superficial wounds could be seen, no one had contracted rabies through this practice.

It occasionally happens that a number of dairy patrons who are enthusiasts for raw milk consume that from a cow subsequently proved to have suffered from rabies. The pertinent question then arises: Should the persons who have ingested the milk be subjected to antirabic treatment? A careful perusal of available literature fails to uncover a single case of human rabies conclusively proved to have followed the ingestion of milk from a rabid cow or other animal. Experimental studies, furthermore, conclude that the milk of rabid animals contains the virus only when the glandular structures have been torn through mechanical injuries and a means of entry provided for the disease.

PREVENTION OF HUMAN RABIES

If rabies is to be prevented in man following exposure, it is imperative to achieve an immunity sufficient to stop the multiplication of the virus in the nervous system.

Every biting dog or cat must be suspected of having rabies in an afflicted community. Each ensuing wound must be thoroughly cleansed with soap and water. When, in consultation with the veterinarian, the physician feels that a particular animal which has bitten a person has probably been or is now rabid, local treatment of the patient must be carried out by the physician. This must be done in order to inactivate any virus which may have been deposited with the saliva. Deep puncture wounds must be surgically exposed, and irrigation with a 20 per cent solution of medicinal soft soap, as recommended by Shaughnessy and Zichis,[3] instituted. Nitric acid, although an accepted chemical in the cauterization of bite wounds inflicted by rabid dogs, has proved impractical in caring for lacerations of the face.

The sanitary code of every modern health department contains provisions for the disposal of unowned, vicious and rabid dogs and for the confinement of animals to prevent the spread of rabies. No effort should be spared by the local health authorities to apprehend alive the dog that has bitten a person; it must be held under observation in a properly constructed kennel for a period of not less than two to three weeks. Even if the dog appears to have contracted rabies it should not be killed, since it is often impossible to demonstrate the characteristic Negri bodies in the brain of an animal prematurely killed in the early stages of the infection. If during the observation period the dog fails to show symptoms or to die, it is obviously unnecessary to begin vaccine treatment.

The physician is, as a rule, confronted by the problem of estimating the possibility of infection occurring in a bite victim; he must at the same time decide on the necessity for prophylactic treatment: two difficult decisions. Local treatment cannot be fully depended on, and since it takes several weeks for rabies to develop in man, the physician will decide to administer postinfectional vaccination as a safeguard.

It is well known that in rare instances the administration of rabies vaccine has resulted in a postpasteurian paralysis. The precise cause of this "treatment paralysis" is not known; it may be an allergic reaction to the nerve tissue protein injected. The number of these paralytic accidents or myelitides as a postvaccinal complication has greatly diminished since the introduction of the Semple vaccine. Piringer,[4] in a recent paper, reported that of 1,249 patients treated only 1, or 0.07 per cent, had developed postpasteurian myelitis. Experimental studies have shown that the subcutaneous injection of immune serum soon after the intramuscular injection of the virus does prevent the development of the disease in a significantly high percentage of infected mice. This type of treatment has not yet been subjected to clinical trial on mar

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From the George Williams Hooper Foundation, University of California.

Read before the Section on Pediatrics at the Ninety-Fifth Annual Session of the American Medical Association, San Francisco, July 5, 1946.

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CONTROL OF RABIES

The Subcommittee on Rabies of the Committee on Animal Health, National Research Council, in a recent report (1945) has urged concerted action for the control of rabies. The report states that: "Rabies has gradually become more and more prevalent in the United States, because of the lack of a uniform policy and concerted action in combating the disease." The two procedures considered most efficacious—restraint and quarantine—have proved valuable in eliminating rabies from many communities, only to have the disease recur. It has therefore been recommended that a rabies control program be developed and coordinated on a nationwide scale either by the Bureau of Animal Industry, United States Department of Agriculture, or the United States Public Health Service.

Coordination is essential, since no quarantine control program can function effectually without a constantly alert dog pound and a staff of veterinary personnel adequate to supervise the impounding and effect the elimination of stray dogs. The licensing and taxation of dogs will provide the funds necessary to carry out the provisions of an enforcement act.

Preinfectional antirabic vaccination of dogs, when combined with other dog-control provisions, appears to be the most satisfactory method of assuring prompt recession of rabies. Now available are vaccines of superior potency, which can confer a high degree of immunity in a single subcutaneous injection of 5 cc. To promote public cooperation, vaccination of dogs should be performed free of charge A voluntary program of canine vaccination in Massachusetts has freed that area from the disease for the first time since its introduction there in the eighteenth century. Alabama's experience with the program was similarly gratifying.

Annual vaccination of dogs is advisable until rabies has been eliminated from every state in the Union. While the disease prevails in a community it is important to recommend to the owners of cats that their pets be vaccinated by the three injection method. The bite of a rabid cat is frequently more dangerous than that of an infected dog

Cooperation of the public is essential To this end, an educational program which has the fullest support of the medical profession, and particularly the family physician, is urgently needed if the national control of rabies is to be successfully launched and the disease eventually vanquished.

PSITTACOSIS

Numerous clinical and etiologic studies have in recent years focused attention on those acute infectious pulmonary diseases which, for want of a better name, have been called "atypical pneumonias." Any pneumonia proved to be neither bacterial nor nonbacterial uninfluenced by sulfonamide compounds and which fails to conform clinically to lobar pneumonia is diagnosed as "viral or virus pneumonia."

As investigation of the nature of the viral pneumonias progressed, it soon became evident that the clinical-pathologic entity of a pneumonitis could have a diverse etiology. As observations of the heterogeneous causation of the disease multiplied, it became imperative to establish, whenever possible, an etiologic diagnosis. This problem was solved with the aid of new virus technic; the complement fixation test was particularly helpful. These new research technics revealed that the sporadic and localized outbreaks of pneumonitis which were noted in certain sections of the country were caused by infection with strains of a virus belonging to the psittacosis-ornithosis group

Psittacosis, once an obscure and rare disease thought to be contracted only by persons associated with parrots, attracted some attention in 1929 and 1930 when importations encouraged by panicky South American parrot dealers resulted in pandemic dispersal of the disease to twelve different countries.[5] The dealers, on learning of several deaths among the members of a theatrical troupe which used a parrot on the stage, had quickly disposed of their birds with the foregoing results.

The wide distribution of psittacosis-like infections throughout the animal kingdom has been established. Since 1931, one member after another has been indicted: latent infections were found in the parakeet-breeding establishments of the United States, Canada and European countries (see Meyer, 1942); the psittacine birds in Australia (Burnet[6]); the fulmar petrels of the Faroe Islands and Iceland (Haagen and Mauer,[7] 1939, and Bedson,[8] 1940); and in the wild and caged pigeon population of the United States (Meyer, Eddie and Yanamura,[9] 1942, and Smadel[10]), Great Britain (Andrewes and Mills,[11] 1943), and South Africa (Cole,[12] 1940). Canaries, finches,[13] chickens,[14] sea gulls and Peking ducks were also found to be infected (Eddie and Meyer[15]).

The virus parasitism of spontaneous psittacosis infection in birds is characterized at first by viremia in the young. Latent localization of the infection in the spleen, liver and kidney in the later stage leads to elimination of the infective agent in the fecal discharges over a prolonged period Inhalation of desiccated bird droppings dispersed by aerial convection from cages, lofts and feathers constitutes the principal mode of transmission from birds to man

Viral agents morphologically similar to the viruses of psittacosis have in recent years been isolated from the respiratory tracts of laboratory mice (Nigg,[16] Karr,[17] Hilleman and others[18]), ferrets,[19] cats and kittens (Baker,[20] 1942) and human beings who were supposed to have had no contact with birds or mammals (Eaton, Becks and Pearson,[21] 1941; Louisiana outbreak,[22] 1945). The ecology of these viruses remains an enigma, although it is suspected that the feline pneumonitis agent can be transmitted to man. It is of interest to note that no proved infections due to contact with laboratory mice are on record; in fact, the assumed risk of handling large breeding colonies of infected animals has not resulted in a single human psittacosis infection (Meyer and Eddie [15]).

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The massive discharge of virus, a condition which might be expected from the known pathology of the disease (localization in focal lesions of the respiratory tract, without a productive cough) seldom occurs. There is convincing evidence, however, that a patient who is fatally ill with psittacosis contracted from an avian source will eliminate virus in large amounts and thus could initiate in the hospital the human to human transfer of psittacosis. Several reports of such incidents have been recorded; the consequences were disastrous (Meyer,[5] 1942, and Olson and Treuting,[22] 1944). It is imperative, therefore, that the physician remember that the occupational hazard to himself and to the attending nurses is considerable. Every human case of severe pneumonitis should be held in strictest isolation and should not be examined or treated without the protection of a face mask.

Despite these incidents, there is thus far no suggestion that a humanized strain of the psittacosis group of viruses has developed. It is noteworthy, in fact, that several cases of psittacosis or ornithosis originally reported with the accompanying statement "no contact with birds" upon careful epidemiologic search were found to have been connected with an unsuspected avian source. It requires little imagination and foresight to visualize the possible future development of various new sources and pathways of psittacosis infection, since it is now proved that the virus may be harbored in the intestinal tracts of chickens and ducks. The host range of psittacosis is today much more extensive than any one imagined it to be ten years ago. The significant fact is that contact with birds of the parrot or pigeon family is no longer an essential forerunner to the suspicion that a patient's illness is psittacosis or ornithosis.

In regard to the possible future direction of the disease from a biologic point of view, one must agree with Burnet [23] and Smadel's [10] theory that the potentiality of an independently spreading human infection does exist. It appears highly desirable to search for such a humanized strain. Ever since Gerlach's [24] demonstration of virus in the sputum of 4 patients who lacked the clinical symptoms of psittacosis the problem of the human virus carrier has possessed both practical and theoretic interest.

A résumé of circumstances which led to the discovery of a human being who had apparently remained a convalescent carrier of the psittacosis virus for eight years is as follows:

In 1938, A. M., a 36 year old biochemist, contracted a severe psittacosis infection while working in a room which contained a centrifuge where virus studies were in progress. Early in the course of the infection virus was demonstrated in the blood (on the second and sixth days) and in the sputum (on the third and sixth days). His convalescence was slow. A productive cough persisted, but a filtered sample of sputum proved noninfective. Annual reexamination of the blood serum invariably yielded a positive psittacosis complement fixation in titers varying from 1:128 to 1:256. A persistently high complement fixation titer with a psittacosis-lymphogranuloma agent as antigen furnishes strong presumptive evidence of the survival of virus in a recovered patient. In the eight years after his initial infection the virus was repeatedly isolated from a twenty-four hour specimen of sputum before and after treatment with penicillin.

A. M. was for five years in close daily contact with 20 to 30 susceptible persons; 8 of his associates were constantly exposed to the aerial droplet nuclei of his coughing spells, without consequence. Five infections resulting from continuous work with viruses of the psittacosis group did develop during the period that A. M. was away, serving with the Armed Forces. It is therefore reasonable to conclude that his contagiousness as a psittacosis carrier is, in the light of recent laboratory findings, of a low order. A comparative study of the strains isolated from the carrier will be published in the near future. There is little or no convincing evidence that the strain acquired new properties.

DIAGNOSIS OF PSITTACOSIS IN CHILDREN

The observations which follow especially deserve the interest of the pediatrician. The laboratories at the Hooper Foundation have from time to time during the past five years been called on to aid in the diagnosis of cases of pneumonitis. Many thousands of serum specimens have been submitted for use in making complement fixation tests in the presence of the psittacosis antigen. Tentative classification of case histories and serologic data records a total of 228 psittacosis cases with 21 deaths, or a mortality rate of 9.3 per cent for the five year period. The exact nature of the infection was proved in 52 cases (22 per cent) when the virus was isolated from the sputum or from the organs at autopsy. The infections were definitely linked with exposure to birds in 219 histories, nearly one half of them after contact with psittacine species. Over 80 infections were connected with pigeons, while ducks, canaries, chickens and even grouse were also suspected as sources. The importance of infected parakeets and parrots as vectors cannot be overestimated; despite the various repeated attempts to control this source of psittacosis, it remains a prime infectional fount.

In performing laboratory diagnoses of submitted pneumonitis cases, samples of patients' serums were studied for antibodies against the psittacosis virus by a routine technic previously described.[25] Because of its close antigenic relationship to the psittacosis virus, the commercial antigenic form of the lymphogranuloma virus has been included in these routine tests during the past two years. It has been amply demonstrated that the coreactions of psittacosis virus with this particular preparation are irregular. The true etiologic nature of the pneumonitis would have been missed had the lymphogranuloma antigen been used as the sole reagent for detecting antibodies in the serums of patients. Even the concentrated and properly standardized lymphogranuloma antigen failed to give complement fixation reactions when serums derived from patients with bacteriologically proved psittacosis or ornithosis were used.

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Unfortunately, the clinical histories furnished by physicians were frequently incomplete; only in 111 cases were ages listed. Persons of middle age and juveniles were involved but *no* children in the age group 1 to 9 years. This is not surprising, since previous experience had indicated that even if children of this youthful group were intimately exposed to the same birds which had infected their parents or older relatives, clinical infections had rarely resulted. Of the 160 psittacosis infected patients of known age in Germany, only 2 were under 10 years of age. These statistics are based on household infections in which clinical similarity rather than serologic or etiologic evidence had decided the diagnosis.

The age group 10 to 19 is known to be susceptible to a mild form of psittacosis. Since 15 of the 111 histories refer to psittacosis infections in this age group, it would perhaps be of interest to analyze the motivating evidence which led to the submission of specimens of serum for examination. The accompanying table may be of assistance to pediatricians.

Close cooperation between the virus diagnostic laboratory and the clinician is vital. The serologic tests which had been requested by the physician furnished no conclusive evidence that the pneumonitis afflicting the 15 children was etiologically connected with a virus of the psittacosis group. The existence of latent infections was, however, indicated. Study of the case histories of the children only served to emphasize the difficulties often encountered in attempting to establish

Psittacosis in Young Age Group

					Complement Fixation Test						
					Early Serum			Late Serum			
Case; Year	State	Age; Color; Sex	Clinical History	Contact with Birds	Titer Psittacosis	Titer L. G. V.*	Week	Titer Psittacosis	Titer L. G. V.*	Week	Isolation of Virus
1. R. D. 1940	Calif.	14 white male	Fever; infiltration right lower lobe	Canaries; boy scout camp	—	—	—	1:32 ++++, 1:64 +++	—	3d	Not attempted
2. C. B. 1941	Calif.	14 white male	Respiratory infection at frequent intervals	Cared for white king-pigeons	—	—	—	1:32 ++++	..	20th (after pigeons destroyed)	Not attempted
3. M. M. 1943	Mass.	16 white female	Pneumonia with pleural effusion; cold agglutinins	No definite exposure	1:2 ++++	—	1st	1:256, 1:16 ++++	..	2d 3d	Not attempted
4. W. S. 1944	Mass.	14 white male	Consolidation left lower lobe	Caught pigeon which died 7 days before onset	1:8 ++++	—	1st	1:16 ++++	—	3d	Not attempted
5. G. E. 1944	Calif.	14 white male	Pneumonia, acute	Nursed sick bird, boy scout camp	0 ++++	—	1st	1:4 ++++	—	3d (at autopsy)	Virus isolated, lung and spleen
6. I. H. 1944	Iowa	15 white male	Fever for 4 days, no productive cough and pneumonitis right lower lobe	Bitten by parrot 14 days before onset	—	—	—	1:256, 1:512 ++++	1:2 +	4th 7th	Virus liver and spleen from parrot
7. M. S. 1944	Pa.	17 white female	Mild pneumonia; father died from ornithosis (sections typical)	Sick pigeons in loft	—	—	—	1:32 ++++	—	4th	Not attempted
8. R. S. 1945	Pa.	15 white male	Mild pneumonia; father died from ornithosis (sections typical)	Sick pigeons in loft	—	—	—	1:8 ++++	—	2d	Not attempted
9. E. G. 1945	Iowa	13 white female	Fever; consolidated areas	Exposed to parrot 3 weeks before onset	1:4 ++++, 1:8 +++	1:4 +	10th	1:16 ++++, 1:16 ++++	1:2 + 1:8 ++++	3d 5th	Not attempted
10. F. K. 1945	Pa.	16 white male	Fever, mumps, facial edema; no response to penicillin	No definite exposure	—	—	—	1:16 ++++	1:4 ++++	3d	Not attempted
11. M. S. 1945	N. C.	16 white male	Virus pneumonia	Raised homing pigeons	—	—	—	1:8 ++++, 1:16 ++	—	10th	Not attempted
12. A. N. 1945	Utah	14 white male	Fever; chest cold	Exposed to parrakeets	1:4 ++++	1:4 ++++, 1:8 ++	2d	1:16 ++++	—	4th	Not attempted
13. G. P. 1945	N. Y.	11 white male	Virus pneumonia and bacillary dysentery	Exposed to infected pigeons and chickens at a cottage school	—	—	—	1:2 +++	0	20th	Virus isolated from sputum (1st week of illness)
14. E. G. 1945	N. Y.	13 white female	Fever for 4 days, rales	Exposed to infected pigeons and chickens at a cottage school	1:16 ++++	1:2 ++++	4th	—	—	—	Not attempted
15. S. H. 1945	N. Y.	9 white male	Atypical pneumonia	Exposed to infected pigeons and chickens at a cottage school	1:16 ++++	1:2 ++++	?	—	—	—	Not attempted

* L. G. V., lymphogranuloma venereum.

proof of recent infection with a virus of the psittacosis group. Particularly in children who are liable to subclinical infections, the demonstration of complement-fixing antibodies capable of reacting with psittacosis antigens in a single sample of convalescent serum must be considered inadequate. The mere demonstration of antibodies which have evidently persisted in the blood serum over a long period of time constitutes proof which is inadequate to justify the unreserved linking of pneumonitis with a psittacosis viral agent. It is imperative that in the future at least two criteria be adopted in the diagnosis of psittacosis: (1) isolation of the virus from the blood or sputum during the acute phase of the disease and (2) the demonstration of a significant rise in titer in complement-fixing antibodies. Blood collections taken during the acute phase of the disease may be of diagnostic assistance if used in making animal inoculations and serologic tests. Certainly, no effort should be spared in the attempt to isolate the virus. Modern technics which destroy concomitant bacteria encourage the use of nasal or throat washings, should the nonproductive cough fail to yield suitable specimens. Again, vomitus or gastric lavage specimens may be successfully injected into mice and examined for virus. In their present form, procedures for the isolation of virus are time-consuming and consequently furnish an etiologic diagnosis in retrospect. Repeated examination of serum samples collected during the first week of illness for complement-fixing antibodies may supply suggestive information. A twofold to fourfold increase in titer, for example from 1 : 2 to 1 : 8 ++++, together with objective signs of a pulmonary involvement warrants an early tentative diagnosis of psittacosis and the prompt institution of specific therapy.

TREATMENT OF PSITTACOSIS INFECTIONS WITH PENICILLIN

Heilman and Herrell[26] have produced evidence that mental psittacosis in the mouse responds to treat- ith penicillin. The results obtained by Parker efendorf[27] in testing the effect of the antibiotic ne multiplication of meningoencephalitis virus were not nearly so impressive as those obtained by Heilman and Herrell and still more recently by Bedson and May.[28] The workers at the Hooper Foundation, treating experimentally infected mice and ricebirds as well as spontaneously infected pigeons, have obtained encouraging results. The outcome was convincing in mice, provided treatment of the nasally infected animals was instituted early in the course of the infection and the antibiotic was used in large doses. Six ricebirds recovered from the infection under penicillin treatment, after having received 6,000,000 units intramuscularly and subcutaneously injected over a period of seventeen days. One ricebird died from psittacosis within twenty-two days and another within twenty-seven days, while the remaining 4 were proved to be carriers when they were killed on the fifty-ninth day after the completion of the treatment. The treatment of the spontaneously infected pigeons was complicated by a secondary invasion of Salmonella typhi murium, and definite evidence of the curative value of penicillin could not in this instance be secured.

Successful treatment of human psittacosis or ornithosis infection with penicillin has been reported by Turgasen,[29] Flippin, Gaydosh and Fittipoldi,[30] and has been communicated to us by others. An opportunity was afforded at the Hooper Foundation to conduct, under careful supervision, the penicillin treatment of 3 infections incurred in the laboratory. The psittacosis virus was demonstrated in the blood of the 3 victims and in the sputum of 1. One of the cases studied is that of patient D. W. Therapy was instituted on the sixth day of this patient's illness. She became afebrile after the initial administration on that day of 80,000 units of penicillin, followed during the next twenty-four hours by 160,000 units. Treatment was continued for six days on the large dosage, was reduced for one day to 110,000 units and finally reduced for two days to 80,000 units.

In patient M. H., more severely infected, treatment commenced on the tenth day of the disease and showed symptomatic and clinical improvement forty-eight hours later, following the administration on the first day of 220,000 and on the second day of 320,000 units of penicillin. On the third day after therapy had started the patient became afebrile and remained so. The dosage, though gradually decreased, was continued for ten days. The immunity response, as expressed in the rise of complement-fixing antibodies, was prompt. It seems worth while to state that at the end of ten months the titers of both patients dropped to 1 : 8 ++++. This definite decline in complement-fixing antibodies justifies the conclusion that the tissues had been largely freed of the viral agent. Whether this result was brought about by the antibiotic or by the immunity mechanism of the patients remains a matter of conjecture. It should be emphasized at this point that mice infected with psittacosis viral agents and successfully treated with penicillin are immune and become carriers (Heilman and Herrell, Bedson and May and Eddie and Meyer).

These observations suggest that when the virus is inside the cells it is protected against penicillin and that only in the extracellular phase, when it is not actually multiplying, is the disease agent apparently susceptible to the antibiotic. The action which takes place is bacteriolytic as well as bacteriostatic. The ultimate destruction of the surviving phagocytized psittacosis viral agent depends on the enzyme action of the parasitized cells, i. e., the immunity mechanism of the host. Early damage to the mechanism in mice renders their recovery from experimental psittacosis relatively difficult. The infection progresses slowly in the ricebird, and consequently penicillin therapy is effective. However, since the immunity mechanism develops slowly treatment must be prolonged for several weeks in order to prevent relapses.

Serious relapses have in several instances resulted from the inadequate treatment of human psittacosis infections. Small doses of penicillin continued for only two or three days after the patient has become afebrile have been found to be ineffective. The dynamic action of penicillin on the psittacosis virus specifies a high dosage level administered in rapid succession early in the course of the infection in order to cut the number of vital elements to a low level and permit the normal defense mechanism of the body to dispose of the few stragglers. Adherence to these principles will greatly reduce the now unduly high human case fatality rate from psittacosis and will prevent the future development of virus carriers.

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ARTHROPOD-BORNE VIRUS TYPES OF ENCEPHALITIS

Shortly after the virus of Western equine encephalomyelitis was isolated from the brain of horses,[31] human infections were noted in persons who worked in close association with infected animals.[32] Conclusive proof of this was not forthcoming until 1938 when Howitt [33] in California and Fothergill, Dingle, Farber and Connerley [34] and Webster and Wright,[35] all working in Massachusetts, isolated the viruses of equine encephalomyelitis from the brain tissues of patients in fatal cases. Since then the Manitoba (Canada),[36] Minnesota and Dakota epidemics of 1940, and the annual outbreaks in the Yakima Valley [37] and in Kern and Fresno counties in California,[38] have attested to the ever increasing importance of this disease.

Surveys taken in many other regions, using neutralization tests on blood serum specimens, have demonstrated the existence there of previously unrecognized infections.[39] These studies disclosed the important fact that the virus of the St. Louis type of encephalitis was frequently active in the same areas. The significance of these observations became clear when Hammon and his associates [40] demonstrated the existence of the virus of both Western equine encephalomyelitis and St. Louis encephalitis in the Culex tarsalis mosquito of the endemic territories. The prevalence of these infections during the season of high temperature in areas subject to agricultural irrigation and periodic flooding of streams—both procedures conducive to extensive breeding of the mosquito—is thus readily explainable. Additional investigations by the same workers have given credence to the possibility that in certain regions fowls, and perhaps other birds, serve as virus-infective sources for mosquitoes. It is important to realize that contact with horses is without consequence to man and that mosquitoes in all probability acquire the viral agent by feeding on birds with subclinical virus infections.

Clinically and epidemiologically the equine and St. Louis types of encephalitis have a great deal in common. In fact, an accurate etiologic diagnosis cannot be made without laboratory aids. Furthermore, in regions where seasonal epidemics of poliomyelitis and encephalitis simultaneously make their appearance, the differential diagnosis of apparent virus infections of the central nervous system requires constant consultation with the laboratory. Nearly 50 per cent of the cases defy differential etiologic diagnosis, even with the best possible cooperation.

Experience [41] has taught that in the majority of the endemic areas the morbidity due to Western and Eastern equine virus is highest in children under 5 years of age. The problem of the arthropod-borne encephalitides thus enters the field of pediatrics.

The actual incidence of these infections is not definitely known, but data available from the annual encephalitis epidemics in Yakima Valley, Washington, reveal between 26 and 58 accurately diagnosed cases, while in Kern County, California, the number is estimated to be as high as 150; in Fresno county it approaches 100. Fatality rates for both infections vary between 3 and 22 per cent. They are particularly high in the age groups below 2 and above 50. In infants the sudden onset of fever followed by vomiting, twitching, strabismus, stiff neck, convulsions and cyanosis characterizes the clinical picture. Proper treatment may bring about complete recovery within a few days, or death may occur within forty-eight hours after onset. Permanent residual cerebral damage with blindness and epileptiform seizures is not uncommon in infants under 6 months of age.

The course of the disease is variable but destructive in children over 3 years of age. Encephalitic syndromes such as fever, headache, slow mental and motor response, aphasia and tremors, are common in the severe type. The observations with respect to the cellular elements in the spinal fluid may be similar to those of poliomyelitis. A final and specific etiologic diagnosis is usually made by serologic tests. The neutralization test is customarily used, but it is hoped that a complement fixation test may in time prove useful, since results may be obtained rapidly even in specimens of blood serum which have been carelessly collected and poorly handled. Convalescence from the disease is

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(Footnote 40 continued in next column)

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usually prolonged, though residual manifestations are less frequent in the latter group of children than in infants.

Demonstration of the viral antibodies in a single sample of convalescent serum was formerly considered adequate for diagnosis. Evidence of this nature is no longer considered to be conclusive. Since antibodies to the St. Louis or equine encephalitis virus have been demonstrated in a large percentage of the normal population in regions where the infections are endemic, it is imperative that two specimens be made available in order to detect any significant rise in the antibody titer which may take place during the time elapsing from the onset of the acute phase of the disease to the end of the convalescent period. The virus has in rare instances been isolated from the spinal fluid or blood. It is more frequently demonstrated in the brain tissues of patients surviving for six days or more after the onset of their illness.

While treatment of the encephalitides must be entirely symptomatic, the prevention of the equine type in susceptible persons may be accomplished through the use of a vaccine produced from virus propagated in a developing chick embryo. This vaccine consists of a fine suspension of virus-bearing chick embryo tissue inactivated by solution of formaldehyde. Since there is no cross protection between the different types of encephalitis vaccines, it is necessary to produce vaccines for each type of virus. Unfortunately, no vaccines are at present available for human use.

There is seldom valid reason to recommend the vaccination of the entire group of most susceptible human beings in a community against encephalitis. The use of modern mosquito control procedures, at least in the United States, should afford better protection against all the arthropod-borne neurotropic virus infections than can specific vaccination against one particular virus. Methods of control for the principal mosquito vectors are now the subject of an intensive study being carried on by the California State Department of Public Health under a grant from the state legislature. A program of this kind must be twofold, embracing both fact finding and direct field control by experiment.

In the three types of infection discussed briefly in this paper, vector control constitutes the most effective weapon which can be forged to prevent the injuries induced by accidental aberrant parasites. Further research in this field can help to conquer the element of chance in one phase of human life.

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ABSTRACT OF DISCUSSION

Dr. Robert F. Korns, Albany, N. Y.: I would like to congratulate Dr. Meyer and Miss Eddie on this enlightened review of the subject, particularly the new information on psittacosis, that gives a little more insight into the epidemiology of this disease. My purpose is to give you the experience accumulated in New York state on two of these diseases: namely rabies and psittacosis. The arthropod borne encephalitis has never been identified there. With respect to rabies, I agree with everything that Dr. Meyer has said on the subject and can confirm the immense increase in rabies as exemplified in New York state. Last year there were close to 700 cases reported. It is hoped that the situation will be improved. A mass dog immunization program has been embarked on. Thus far, there has not been accumulated enough information to offer a conclusive answer on the question of the value of this procedure, but it has been helped by a change in the state law last year which allowed the Commissioner of Health to designate areas in which rabies existed where vaccinated dogs would be allowed at large; the Commissioner felt that dogs could be allowed at large that have been adequately vaccinated. Many New York counties have embarked on this dog vaccination program on a voluntary basis and, to date, eight of them have completed such programs, vaccinating over 90 per cent of the dogs enumerated in the counties on an entirely voluntary basis. Preliminary analysis indicates that the attack rate in vaccinated dogs worked out on the basis of dog months and exposure to rabies in a community where it exists and dealing only with licensed dogs to avoid the difficulty with the stray animals and underenumeration, the attack rate in vaccinated dogs has been calculated as 4.5 per 100,000 dog months of exposure. When this is done for the nonvaccinated dog population in the same areas, a figure of 23.6 per 100,000 dog months of exposure is arrived at, roughly five times as great. Again, these figures are tentative. I don't want to imply that the vaccination of dogs is the whole story, but it is to my mind very worth while. I wish to comment also on the psittacosis group. We have been jointly concerned with several investigations in New York state, and one study in particular furnishes some new information. Dr. Meyer mentioned the occurrence of the disease in ducks. This had not been previously reported and I want to tell you of the occurrence of the disease in Long Island during the past year. About April 1945 Dr. William Wolins in Riverhead had a case of an atypical pneumonia which puzzled him, and he thought that it might be psittacosis. He sent serums to Dr. Meyer, by whom the diagnosis was confirmed. Later, search was made for additional cases and the interesting observation was that the carrier was a duck handler. Long Island is famous for ducks. There are 7 million ducks coming out of that island annually. A search revealed about 19 cases of atypical pneumonia having the same clinical picture, rather mild for the most part, in duck handlers. Only 10 of these demonstrated serologic evidence of psittacosis. The epidemiologic evidence implicated duck handlers since in only 2 of these cases the patients did not have intimate contact with ducks. Furthermore, serologic survey of duck handlers versus nonduck handlers showed the contradiction there. Of over 100 ducks examined by Dr. Meyer and Miss Eddie, 34 per cent of them have shown a virus of the psittacosis group. Furthermore, 3 of 7 sea gulls showed the virus. Evidently the disease has been existing in ducks in Long Island for many years and has only recently been discovered.

Dr. Gilbert J. Levy, Memphis, Tenn.: Dr. Meyer, what is the longest incubation period of rabies in man? I had a patient, a child, who had been bitten two years previously by a rabid cat. Is this possible?

Dr. Karl F. Meyer, San Francisco: I would like to answer this question. According to my personal observation the longest incubation time in rabies was three hundred and sixty-seven days. The particular person had been bitten by a rabid cat unknown to her. She spent a vacation in one of the summer resorts and came down with a bizarre disease which later was identified at autopsy as rabies. I am sorry that Dr. Korns from New York had to smear his own state with duck psittacosis. I would like to remove that stigma and say that we have it in California as well. A study has just been completed in which it was shown that 3 of 11 ducks obtained from the chicken town, Petaluma, contained the psittacosis virus. I don't want to create now a great deal of fear that you shouldn't eat any ducks. You probably have done it a great many times and have never contracted psittacosis, but it is worth while to keep in mind that this new reservoir of psittacosis is enormous. There are indications that children playing with ducks contract mild infections from this source.

CHOICE OF ANESTHESIA IN ORTHOPEDIC SURGERY

CAPTAIN JOHN B. DILLON
Medical Corps, Army of the United States

There are no surgical patients who present more diverse conditions than those met by the orthopedist, and there are few patients who present greater problems to the anesthetist.

The day has passed when it can be said that one or two anesthetic procedures will cover all cases. The development of special surgical technics not only necessitates the development of special anesthetic technics but depends on their development.

The anesthetist has a dual responsibility. First, he has an obligation to the patient to see to it that the patient suffers no damage or at least minimal damage from the anesthesia and if possible that the patient is in better physical condition than he was prior to entering the operating room. Second, he has an obligation to the surgeon, namely, to provide the type of anesthesia that will enable the surgeon to accomplish the procedure at hand with no added difficulty. Ideally, the surgeon should be able to request an anesthetic and then forget that problem entirely. Unfortunately this ideal situation now exists in relatively few localities, but it will spread as the importance of anesthesia in the order of surgical technics is realized and more men are attracted to it as a specialty.

It is not possible categorically to state that certain anesthetic procedures are better than others for certain orthopedic problems. The anesthetic of choice depends on many factors. The age, the physical and psychologic condition of the patient, the condition to be corrected, the facilities, the explosion hazards and the local custom must all be taken into consideration.

Proper preoperative care is many times more important than the use of any particular anesthetic agent.

It should be thoroughly established before an anesthetic is administered that the patient is not in shock or, if shock is present and an anesthetic must be administered (a condition rarely justifiable), that active measures have already been taken to overcome the shock.

It should be determined that the patient has not eaten or taken a quantity of fluid within six hours before inhalation anesthesia is started. If either has been ingested the stomach should be emptied prior to anesthesia, for it will empty during either induction or emergence, and this is a source of many anesthetic complications.

Preoperative medication is of major importance for all patients who are to receive an anesthetic. The basis of a smooth anesthetic rests on the adequacy of premedication, and either insufficient or excessive dosage can greatly complicate the procedure. The drugs and dosages used vary with the age, weight, psychic state and metabolic peculiarities of the patients. I do not ordinarily use a narcotic for patients under 12 years of age. For these patients $\frac{1}{2}$ to $1\frac{1}{2}$ grains (0.03 to 0.1 Gm.) of seconal sodium with from $\frac{1}{400}$ to $\frac{1}{150}$ grains (0.00016 to 0.0004 Gm.) of atropine has proved satisfactory. In patients of an age range from 12 to 60 pentobarbital sodium or seconal sodium, scopolomine hydrobromide and morphine, codeine or other narcotics are used, depending on the factors previously mentioned. For those patients over 60 whose metabolic processes have slowed, the dosages are reduced and the use of codeine or Demerol hydrochloride is preferred because they have the least tendency to depress respiration.

In emergency cases and occasionally in elective cases the premedication is administered intravenously, the dosages being adjusted to meet the increased rate of action.

An elective surgical procedure should not be started until it has been determined that whole blood is available in adequate amounts. In emergency cases the blood of all patients should be cross matched on admission. Blood is not expensive therapy; rather, it is probably the cheapest, because there is no doubt that 1 or 2 pints (500 to 1,000 cc.) of whole blood will so reduce convalescence that shorter hospitalization will more than make up for its cost. There is no branch of surgery in which blood is more frequently needed than in orthopedic surgery because of the large number of emergency cases, the length of many of the operations and the difficulty of securing complete hemostasis in bone work. Finally, facilities should be available to prevent the occurrence of hypoxemia. Too often it is the so-called "simple case" for which none of these precautions or safety measures have been arranged which results in disaster. There is no "simple case."

In pediatric orthopedics, generally speaking, it would seem that inhalation anesthesia is the most desirable. There are cases in which local anesthesia may be used. A few locals have been successfully done for the reduction of green-stick fractures of one bone of the forearm in patients less than 10 years of age. For manipulations, reduction of fractures involving overriding of long bones and in cases requiring surgical intervention, open drop ether or vinethene is used if the time required is to be short. Oxygen may be added by means of a catheter beneath the mask. If it is necessitated by the position of the patient, an endotracheal tube may be passed to insure an adequate and absolutely patent airway. The ordinary gas machine has too much dead space, permitting the accumulation of excessive amounts of carbon dioxide, to be used on patients below the age of approximately 10 years. There is a real need for a "children's machine" in every hospital. Although it is used in many localities, I do not use ethyl chloride for the induction of anesthesia in pediatric cases because of the possibility of ventricular fibrillation. With proper premedication I have found it unnecessary.

I do not feel that spinal anesthesia should be used unless the patient is 14 years of age or of comparable physical development. It has been, and can be, used with apparent safety, but it is preferable to withhold it until the spinal anatomy has become essentially adult.

From the age standpoint alone there is little choice between spinal and inhalation anesthesia for patients between the ages of 14 and 60 undergoing an orthopedic operation on the lower extremities. The absolutely essential factors are adequacy of airway, oxygen supply to the tissues and replacement therapy. In cases in which the patient is to be on his abdomen I prefer spinal anesthesia, either single dose or continuous, depending on the duration and extent of the procedure to be accomplished. The reason for this is that respi-

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ration is least interfered with when low spinal anesthesia is used and relaxation of the large muscle masses is maximum. If spinal anesthesia is not practical or desirable and the patient is on his abdomen, as for a spinal fusion, an endotracheal type of anesthesia is done. I have also used endotracheal anesthesia for the hemipelviotomy for which I was called on to give an anesthetic. The reasons for using the endotracheal type are to insure an adequate airway at all times and to be able to resuscitate the patient if this should prove necessary.

In upper extremity work the nature of the case should determine the type of anesthesia. Such types of regional anesthesia as brachial blocks and triple nerve blocks find their greatest usefulness here. For surgery about the shoulder girdle I use inhalation anesthesia, usually endotracheal, because it leaves more room for the surgical team and also for the reason previously mentioned.

I do not use pentothal sodium as an anesthetic. It gives amnesia and is a powerful hypnotic. I use it as an hypnotic and secure relief of pain with nitrous oxide and oxygen with never less than 20 per cent oxygen. I also use pentothal sodium in inducing ether anesthesia to avoid the disagreeable and occasionally difficult and dangerous second stage of anesthesia. It is true that pentothal sodium can be used alone for many orthopedic procedures, but in my opinion this is neither safe nor desirable, because the drug must be given in amounts that profoundly depress respiration in order to produce sufficient narcosis to suppress reflex responses to pain.

The choice of inhalation agent is largely determined by local custom, the desires of the surgeon and anesthetist and the degree of relaxation required. In the age group under discussion (14 to 60), barring metabolic complications and explosion hazards, there is little to choose between the various agents if oxygen supply to the tissue, airway and replacement therapy are adequate.

Intocostrin (curare) may be used with light inhalation anesthesia, such as nitrous oxide-oxygen, to give adequate relaxation and safety from explosion. I have used the combination extensively and have found it both safe and satisfactory to surgeon and patient. The combination has been found of great value in operations on the bones of the face, as patients do not vomit when emerging from the anesthesia. For operations involving the administration of intocostrin an endotracheal tube is always used.

In the aged, the problems for the surgeon and anesthetist multiply because of the general metabolic depression of such patients. Because of the milder effects on the patient's metabolism, a combination of local or regional anesthesia and a light inhalation anesthesia for amnesia and additional relief of pain finds its greatest use in the aged. The muscle masses are diminished and relaxation is not such a severe problem. Absolutely minimal spinal anesthesia may be used on selected patients. Because of the low vital reserves, replacement and oxygen therapy are of the utmost importance, and if they are kept in mind the possibility of tragedy is minimized. With proper premedication and careful handling extensive hip operations may be done with a minimum of complications incident to anesthesia and surgery under surprisingly light anesthesia. However, regional and/or local anesthesia are to be preferred over any inhalation method if they can be used.

The most serious metabolic problem met in anesthesia for orthopedic surgery is that of diabetes. Because of insulin therapy and proper diet and care, more and more diabetic patients are requiring surgical intervention not only in the younger but in the older age groups. For amputations in these diabetic patients there is no substitute for refrigeration anesthesia, properly given. Because ether produces acidosis, its use is to be avoided in these patients. When cyclopropane can be used, it is probably the inhalation anesthetic of choice, although nitrous oxide-oxygen plus curare may be preferred in certain cases, namely, those of patients with cardiac complications. Regional, local and spinal anesthesia should be considered in cases complicated by diabetes even though their use might not be ideal in the light of other considerations.

Too much stress cannot be placed on supportive therapy before, during and after surgical intervention. Whole blood has no equal in treating hemorrhage. Plasma finds its use in cases complicated by crushing and trauma when whole blood has not been lost before or during surgery and in cases in which there is hemorrhage when whole blood cannot be secured. Oxygen administration even when inhalation anesthesia is not used is frequently of the utmost value, since it conserves the energy of the patient. The alleviation of fear and apprehension by wise and adequate sedation goes a long way to reduce the incidence of operative and postoperative shock. Replacement of water and electrolytes by the administration of isotonic solution of sodium chloride, and the provision of adequate nourishment by the giving of dextrose and aminoacids make for a smoother convalescence. It is not possible to be specific as to dosages and amounts in a paper of this type; there can be no substitute for good clinical judgment.

It is vital if medical science as related to surgery is to progress, that there develops an appreciation of the great importance of anesthesia in the overall picture. The day of "pouring ether" or of giving a "whiff of gas" or a "shot of spinal" is ending. The medical anesthetist is becoming more and more prominent because of the gradual realization that he can do much, if allowed, to make the task of the surgeon easier and the course of the patient undergoing surgical intervention smoother and safer.

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ABSTRACT OF DISCUSSION

Dr. C. J. Betlach, Santa Barbara, Calif.: The choice of anesthetic is not as important as the manner in which the anesthetic is administered. With the wide variety of anesthetics and methods now available, it is important that the anesthetic chosen be one with which the anesthetist is familiar if he or she is not fully trained. I disagree with Dr. Dillon with regard to pentothal sodium. I use pentothal alone a great many times, especially for the shorter procedures of five to fifteen minutes, and find it very satisfactory. It is sometimes difficult to get the pentothal started and get nitrous oxide or oxygen started, or cyclopropane started before the orthopedic surgeon has completed his procedure. There are many combinations of anesthetics that can be used in orthopedic surgery, and the one that I prefer and like to use a great deal is a combination of pentothal and nitrous oxide, or regional anesthesia and pentothal. In debilitated persons requiring amputation of the lower extremity, one can produce sufficient spinal anesthesia with as little as 35 mg. of procaine. The patient will still retain movement of his extremity, but he will have enough analgesia to carry out the procedure. I should like to emphasize that the anesthetist must anticipate shock and be prepared to keep the patient in good condition by the administration of fluids and whole blood.

DR. DOROTHY A. WOOD, San Mateo, Calif.: The armamentarium at the command of the anesthetist is as varied as the surgical picture demands, and it is therefore up to the anesthetist to adjust the anesthesia to the problem at hand. The practice of giving small doses of a combination of agents is an excellent one, particularly in combination with nitrous oxide and oxygen and with the maintenance of a high percentage of oxygen. I wish to concur with Dr. Dillon in stating my disapproval of the use of sodium pentothal as an anesthetic, for the drug must be given in amounts that profoundly depress respiration in order to produce sufficient narcosis to suppress reflex responses to pain. Dr. Dillon did not mention solution of tribromoethanol. During the last four years the orthopedic work with which I have been associated has largely been necessitated by accidents and casualties either industrial or traffic in origin. Patients have frequently arrived in the emergency room with multiple fractures involving two or more extremities, and 1 had both arms and both legs broken. In addition, there may be multiple lacerations which require suture. Roentgenograms are necessary and the facilities of the operating room are needed, so that transportation of the patient through the corridors becomes a problem. I have found that an 85 mg. per kilogram of body weight dose of solution of tribromoethanol facilitates all this, and that lacerations can be cleansed and closed, airway inserted and oxygen and nitrous oxide given at the time the more painful procedures are instituted. Frequently the patients have lacerations on the back which require that the patient be placed on his abdomen for part of the repair, and under anesthesia with solution of tribromoethanol this change in position can readily be accomplished. In fracture of the hip in which it is the surgical procedure to insert a pin, there are always delays and intervals in which no pain is inflicted while x-rays are being taken and developed and returned to the operating room with the report of the position, and we have found that anesthesia with this drug is satisfactory, with the addition of nitrous oxide and oxygen when the painful procedures occur. Again local custom comes to bear on this subject. Others with a limited experience with the drug may not be as favorably impressed, but I speak from the experience of fifteen years of almost daily usage for one reason or another. I should also like to say that I was the first one to administer vinethene to a human being, and I have not used it many times since.

DR. F. E. CLOUGH, San Bernardino, Calif.: I am neither an anesthetist nor an orthopedic surgeon, although I am an orthopedist by adoption since they began treating acute fractures. That is just a recent thing, because thirty or forty years ago an orthopedist never saw an acute fracture.

I live in a city of 60,000 people. All of the good anesthetists during the past five years have been in the war. The only fellows available to give anesthetics have been my age.

Over a period of forty-odd years I have had considerable experience in traumatic surgery, and through the last few years I have encountered a Colles' fracture or a greenstick fracture every few days. I was amazed on coming to San Bernardino many years ago to find that anesthesia was induced by ethyl chloride in a very large percentage of the cases, and much to my interest it is still being done. I have yet to see the first bad effects from that type of induction. Physicians here go ahead by themselves and do not hesitate to give enough ethyl chloride that the patient does not know what is being done when the fracture is set. One does not always have to wash out the stomach of a patient because he had some food within six hours. It is a great deal easier to let the patient put it in a pan, and I don't think anybody strangles from it. There is no need to get a trained anesthetist out of bed to do a lot of these things. There is too much tendency in the big hospitals today to feel it necessary to have from three to seven assistants and from two to five scrub nurses, when two persons helping could do the same amount of work.

DR. ALLEN CONROY, Chicago: I have heard nothing said about three problems that are peculiar to orthopedic surgery. One is the difficulty encountered with operative procedures around the neck, in which a cast or some other fixation apparatus is used to stabilize the head and neck and shoulders as one unit. For some time endotracheal anesthesia was used for that particular job, which ended with the patient almost completely enclosed down to the nipples with the tube sticking out through the cast at the mouth. A couple of near disasters occurred when the tube was removed. The fact that the position of the air passages had been changed during overcorrection was overlooked. As long as the tube was in, the procedure was safe; when it was withdrawn, the whole cast had to be taken off. So there might be something to be said for rather preliminary casting and testing of the position, or even allowing the patient to recover sufficiently till his throat reflexes have returned before making a final connection between the head cast and the shoulder portion. Second, the patient who is still profoundly anesthetized is in no position to correct for the circulatory changes that occur when he is set erect for some types of fixation. His muscle tone is gone, and probably some of the circulatory centers are inactive. He cannot compensate quickly enough, the blood pressure drops, and he goes into what resembles profound shock. I have found it satisfactory to pull the patient and the mattress beyond the upper end of the table and let the patient's head and neck and the center of the shoulders rest on the anesthetist's knee. Finally, many surgeons when performing a lumbar fusion or laminectomy expect the patient to be jack-knifed over a very high rise in the table. That is fine from the surgical point of view and I do everything I can to help the surgeon get that back straightened out so he can find a place to work. But I would beg of you to do something to allow some excursion of the diaphragm. One way to achieve that is with a roll under the hips and a horseshoe pillow that comes up the side of the body and underneath the shoulders. I have generally found that one has to make a compromise in the very fat patient. I think most anesthetists would appreciate some surgical compromise on the jack-knife position.

CAPTAIN JOHN DILLON, Los Angeles: I do not have a great deal to say regarding these momentary anesthetics. I had two Colles' fractures set without any anesthetic, and it did not do me any particular harm; so one can even go back to no anesthetic at all. The point is not what can be done with primitive methods but what is best and what can add to progress in medical science to the benefit of the patient. I am willing to agree that it would be less expensive if an anesthetist were not called out of bed in the middle of the night to give an anesthetic of thirty seconds for reduction of a greenstick fracture, but the problems under discussion, on the whole, have been of more major surgical importance. Ethyl chloride has been used and can be used. I have no particular objection against its use by anyone, although personally I do not like it. In regard to Major Conroy's difficulties, I have had the same difficulties, and they are very severe. The use of multiple spicas which sometimes involve both shoulders or both hips—in these combined orthopedic and surgical cases—is really very, very serious. One solution (and this is not the only solution), which proved satisfactory was the use of pentothal induction for a nitrous oxide endotracheal anesthesia, using curare as a preliminary relaxant. These patients will go along six and seven hours with nitrous oxide-oxygen anesthesia and a little codeine if they tend to get restless, or a little Demerol given intravenously, and at the end of the surgical operation they are flushed out with oxygen once or twice, the tube is removed and the patients will begin to talk and in less than an hour they want to eat. The multiple casts or heavy spicas, particularly on the shoulder girdle and round the hip when the patient has to be manipulated many ways, offer one type of solution.

INFECTIOUS GRANULOMATOUS LESIONS OF THE CERVIX

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The group of infectious granulomas of the cervix include lesions resulting from tuberculosis, granuloma inguinale, syphilis and chancroid.

Their importance depends on their morphologic resemblance to carcinoma as seen at speculum examination, while in general the symptoms of the granulomatous cervical lesions are basically those of carcinoma. Minor deviations of this will be pointed out in the discussion of each type of lesion. The clinical course, therapy, psychologic effect on the patient and the prognosis, on the other hand, are vastly different from those in carcinoma.

In the two year period from March 1, 1944 to March 1, 1946 there were 123 patients admitted to the obstetric and gynecologic service of Parkland Hospital for biopsy of the cervix. Microscopic examination of the tissues revealed: carcinoma in 24, or 19.4 per cent; cervicitis in 79, or 64 per cent; cervical polyp in 3, or 2.5 per cent; adenoacanthoma in 3, or 2.5 per cent; cervical fibroid in 3, or 2.5 per cent; leukoplakia in 2, or 1.6 per cent; squamous metaplasia in 2, or 1.6 per cent; granuloma inguinale in 3, or 2.5 per cent; tuberculosis in 2, or 1.6 per cent; tertiary syphilis in 1, or 0.8 per cent, and chancroid in 1, or 0.8 per cent. In addition 26 cases of primary and secondary syphilis and 1 case of chancroid were found in the Dallas Venereal Disease Clinic of Parkland Hospital during the last ten months of this study.[1]

TUBERCULOSIS

In 1851 Giel [1a] wrote a clinical description of tuberculosis of the cervix, to which little new has been added. In 1892 J. W. Williams [2] wrote an extensive review for the first time in America and collected 68 cases of the disease from the literature. Many other significant papers followed, but the best modern review was contributed by Collins [3] in 1938, who reported 6 cases from his practice and added 185 from the literature.

Incidences as reported vary considerably, but it is believed that with correct diagnosis the incidence would be significantly increased. Counsellor and Collins [4] recorded an age incidence of 20 to 40 in 73 per cent of their cases and stated that marriage and pregnancy are contributing factors in the disease. Our cases were in a 23 year old Negro nullipara and a 43 year old white octipara.

Tuberculosis of the cervix is primary if other foci are absent. The origin of primary cervical infections is by introduction from the outside. In our first case infection was evidently primary, since no other focus of infection was found despite nearly two years of observation.

In our second patient the lesion was secondary to foci in the lungs and upper part of the genital tract. In approximately 85 per cent of cases tuberculosis of the cervix is secondary in the fallopian tubes, lungs, genitourinary and gastrointestinal tracts, in the order given.

Four different types of lesions, depending on the resistance of the host, the virulence of the infection and the amount of tissue reaction, may be present: ulcerative, miliary, papillary and bacillary catarrhal. The ulcerative type is most commonly seen and appears as a large area of deep ulceration with ragged undermined edges and a red, soft, easily bleeding, granulomatous base. Microscopically, the fungoid vegetation is covered with any of the various epithelial types and the stroma is infiltrated with tubercular elements.

The miliary type exhibits external cervical tubercles, microscopically typical, with or without caseation. In the bacillary catarrhal type the cervix appears grossly normal but often is large and edematous because the infection is deep in its substance. Microscopically, tuberculous nodules in various stages of evolution are seen. The ulcerative and papillary lesions are not grossly distinguishable from carcinoma and, like it, may extend to the vagina, parametrium, uterus and adnexa. The bleeding may be spotty or profuse because of the ulcerative nature of the lesion. Our first patient evidenced postcoital spotting, but bleeding was sufficiently profuse in the second patient to require the replacement of blood. Leukorrhea is also a prominent symptom and is grayish yellow, thick, profuse and foul because of the destruction of tissue and the presence of caseous material. Often it is the only symptom and may be overlooked both by patient and physician. In our cases neither patient gave a history of leukorrhea although each admitted its presence for an indefinite period on specific questioning. Loss of weight, night sweats, anemia and weakness may be present, but generally these are due to the presence of tuberculosis elsewhere in the body. Pelvic pain is present with secondary infection or with tuberculous extension to the vagina, parametrium and upper part of the genital tract.

Clinically the diagnosis is seldom made, although one must be suspicious of all granulomatous lesions of the cervix in patients with tuberculosis elsewhere. In neither of our patients was the lesion correctly diagnosed preoperatively, since the usual diagnosis of carcinoma was made. Only after the pathologist failed to confirm the diagnosis of carcinoma was the true nature of the condition suspected. The finding of Mycobacterium tuberculosis in the vagina or in the injected guinea pig is, of course, definite.

The treatment may be curative or palliative, depending on parity, age, localization to the cervix, extension or degree of distant focus. The operation may consist of cervical amputation or total hysterectomy. Our first patient was a young nullipara with the lesion localized to the cervix and without evidence of tuberculous foci elsewhere; a low cervical amputation was performed. Later she received a subcastration dose of

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[1] Under the direction of A. Schoch, M.D., and L. J. Alexander, M.D.

[1a] Giel, cited by Williams.[2]

[2] Williams, J. W.: Tuberculosis of Female Generative Organs, Johns Hopkins Hospital Rep. **3:** 85-152, 1892.

[3] Collins, D. C.: Management of Tuberculosis of Cervix: Report Based on One Hundred and Ninety-One Cases, Six Cases Being Reported for First Time, J. A. M. A. **112:** 605-610 (Feb. 18) 1939.

[4] Counsellor, V. S., and Collins, D. C.: Tuberculosis of Cervix Uteri, Am. J. Obst. & Gynec. **30:** 830-840 (Dec.) 1935.

roentgen radiation. After two years there was no evident recurrence, she was in good physical condition and her menses had returned six months after radiation. The second patient with extensive involvement was treated palliatively.

GRANULOMA INGUINALE

The cervix is now recognized as a primary or secondary site of granuloma inguinale. Because of the presence of lesions other than in the inguinal region, Pund[5] suggested that the entity be called "granuloma venereum." Since this is often confused with "lymphogranuloma venereum," we offer the term "granuloma venereum cervicitis."

Gardner[6] in 1928 suggested that some of the exuberant nonmalignant granulomatous lesions of the cervix might be granuloma inguinale. In 1934 McGee[7] reported 8 such lesions from Charity Hospital of Louisiana but was unable with the staining methods then at his disposal to demonstrate Donovan bodies in the tissues. Nevertheless the histopathology and the favorable response to antimony and potassium tartrate were identical to those of true granuloma inguinale. Later Arnell and Potekin[8] (1939) were able to demonstrate Donovan bodies in preserved tissues from 4 of McGee's patients by the use of silver stains. Pund and Greenblatt[9] in 1937 established granuloma inguinale as a distinct clinical entity by utilizing the fact that Donovan bodies have a special affinity for silver. Arnell and Potekin[8] in 1939 reported 38 cases and collected reports of 12 others between 1937 and 1939. In 1938 Pund and Gotcher[10] and Pund[11] in 1944 demonstrated that the disease can involve the uterine corpus, parametrium and adnexa and can produce death.

Like tuberculosis, granuloma venereum cervicitis undoubtedly will be found, with correct diagnosis, to be a relatively common lesion particularly in the Negro.

The specific etiologic agent is a micro-organism, the Donovan body, probably a protozoan, which to our knowledge has never been cultured and is pathogenic only for man.

On examination the early lesion appears as a shallow ulcerated area with well defined edges and a diffuse, red, granulomatous base. The advanced lesion consists of a large cauliflower excrescence of soft, red, friable tissue displacing part or all of the cervix. Not infrequently there may be extension to the adjacent vaginal walls or uterus, adnexa, inguinal regions and bones. Both types bleed easily and resemble carcinoma except for the softness of the lesions. However, it must be remembered that granulomatous lesions which contain large amounts of fibrous tissue may feel hard like carcinoma. All 3 of our cases were of the advanced type. In 2 patients the lesion was confined to the cervix, but in the other it extended to the vagina, uterus, adnexa and bones. This patient died of the disease.

Microscopic examination of the lesion reveals an abundance of loose connective tissue with many young blood vessels. The exuberant granulation tissue is interspersed with large numbers of plasma cells, and there is a diffuse infiltration of polymorphonuclear leukocytes. The essential microscopic feature is the presence of large monocytes with many intracytoplasmic spaces in which Donovan bodies are dispersed. These bodies are elliptic or round, stain deeply and are usually arranged peripherally in the intracytoplasmic spaces.

The symptoms do not vary from those of carcinoma, but the youth of the patient is suggestive of a nonmalignant lesion. Two of our 3 patients were parous; the other was not. All were young Negresses aged 21, 22 and 28 years. This youthful incidence agrees with that in other published reports.

The 21 year old pregnant patient was admitted at term for painless bleeding of moderate amount. The 22 year old patient was readmitted three weeks after delivery because of excessive bleeding. The 28 year old nonpregnant patient was admitted to the gynecologic service because of profuse vaginal bleeding. Pain was present in 2 patients but was due either to extension of the disease or to secondary infection, a frequent complication. Arnell and Potekin[8] reported pain in 70 per cent of their patients. Secondary anemia is nearly always present, the hemoglobin level being 60, 55 and 40 per cent in our 3 cases.

The final diagnosis depends on a demonstration of the Donovan body in smears, scrapings or a biopsy specimen. Better results are obtained by the use of biopsy. Diagnosis is by no means a simple matter in chronic cases, as the characteristic monocytes may be scarce. Extensive search of material from repeated biopsies and the use of special stains is frequently necessary, as shown in the study of the nonpregnant patient of this series. After four separate biopsies failed to reveal carcinoma Donovan bodies were found by diligent search of Giemsa-stained sections. The biopsy should always include the base of the lesion as well as normal cervical tissue. If hematoxylin and eosin stains show the tissular reaction of granuloma venereum cervicitis without the demonstration of the Donovan bodies, Dieterle's silver stain or Giemsa stain should be used. Recently Kornblith[12] has advocated a skin test as an aid in diagnosis, but his work as yet lacks confirmation.

Therapy is general, local and specific. General measures include adequate diet, vitamins, penicillin and sulfonamide compounds given parenterally. Local therapy in the form of sulfonamide jellies or sulfonamide powder is frequently of benefit. Specific therapy by the administration of one of the antimony compounds over a period of six months as stibophen (Fuadin) 5 cc. twice weekly, antimony and potassium tartrate 1 per cent, 10 cc. twice weekly, or Anthiomaline (antimony and lithium thiomalate) 3 cc. three times weekly. Our 3 patients were treated with stibophen with a good response in 2 of the cases. The third patient with dissemination of the infection to other areas of the body died from the disease.

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[5] Pund, E. R.; Huie, G. B., and Gotcher, V. A.: Granuloma Inguinale of Cervix Uteri: Statistical Study, Am. J. Obst. & Gynec. **37**: 447-479 (March) 1939.

[6] Gardner, G. H., in Kelly, H. A.: Gynecology, New York, D. Appleton and Company, 1928.

[7] McGee, W. B.: Granuloma of Cervix, Am. J. Obst. & Gynec. **28**: 244-250 (Aug.) 1934.

[8] Arnell, R. E., and Potekin, J. S.: Granuloma Inguinale (Granuloma Venereum): Analysis of Thirty-Eight Cases, Am. J. Obst. & Gynec. **39**: 626-635 (April) 1940.

[9] Pund, E. R., and Greenblatt, R. B.: Specific Histopathology of Granuloma Inguinale, Arch. Path. **23**: 224-229 (Feb.) 1937.

[10] Pund, E. R., and Gotcher, V. A.: Granuloma Venereum (Granuloma Inguinale) of Uterus, Tubes and Ovaries, Surgery **3**: 34-40 (Jan.) 1938.

[11] Pund, E. R., and McInnes, G. T.: Granuloma Venereum: A Cause of Death; Report of Six Fatal Cases, Clinics **3**: 221-234 (June) 1944.

[12] Kornblith, B. A.: An Intradermal Reaction as an Aid in Diagnosis of Granuloma Inguinale, New York State J. Med. **44**: 2476-2478 (Nov. 15) 1944.

The disease as it affects the pregnant patient deserves special mention. The therapeutic response is poor, infection is common and large growths may cause dystocia, hemorrhage and cervical and uterine tears. In some cases delivery by elective cesarean section with or without hysterectomy may be indicated. Our term pregnant patient was delivered of a live infant by low cervical section after four hours of labor. The postoperative course was uneventful, although a morbidity of three days occurred with the highest temperature being 101 F. On the other hand, vaginal birth is not impossible, since the disease of our second patient was not diagnosed until three weeks post partum. Obviously the disease was present and unrecognized during pregnancy.

SYPHILIS

Nearly a century ago syphilitic manifestations of the cervix were first noted by Ricord,[13] and until recently these lesions have been regarded as uncommon. In a large and carefully examined series of patients Davies[14] reported an incidence of 44 per cent. Sharp, Alexander and Schoch[15] in 1943 reported 10 primary and secondary syphilitic cervical lesions from the Dallas Venereal Disease Clinic of Parkland Hospital and stated that in many instances the initial infection in the female was on the cervix. Cervical syphilis may be primary, secondary or tertiary. The primary stage is represented by the chancre. The secondary stage appears either as an erosion, macule, papule or ulcer. The tertiary lesion is an ulcerative or proliferative gumma and is the type most commonly confused with carcinoma. Our 26 primary (10 chancre) and secondary (6 erosions, 5 macules and 3 ulcerations) syphilitic lesions were found by the performance of routine dark field examination on all women with infectious syphilis or exposed to infectious syphilis.[15a] In the biopsies made in this study only 1 tertiary syphilitic lesion of the cervix was found.

While the primary lesion on the outer genitals presents and retains its characteristic and pathognomonic aspect, the chancre of the cervix undergoes a rapid and variegated evolution. In the stage of greatest development it appears as a deep, funnel-shaped sore with thickened, rounded edges which slope down to a smooth floor of glistening brown. A grayish or white pseudomembrane composed of necrotic tissue and therefore firmly attached covers the base of the ulceration. A thin red or reddish brown line encircles its periphery.

The macules are a grayish white due to a thickening of the overlying epithelium, which may also lead to a slight elevation of the affected area. Large macules or confluences of smaller ones are termed mucous patches. The erosion is pinkish or brownish, but more often it is covered with a grayish exudate which, though small in amount, abounds in spirochetes.

Secondary ulcers appear in various forms and morphologically resemble early carcinoma in many instances. Some are red, varied in size and devoid of characteristic features. There is present an associated profuse, yellow, mucopurulent discharge with a considerable amount of detritus and a sickly odor which is different from the stench of cancers.

The tertiary form is that of a gumma, which in the majority of instances undergoes ulceration and necrosis; or, as in our patient, a predomination of tissue proliferation occurs so that a fungating, soft mass replaces most or all of the cervix.

On microscopic examination many new capillaries are found, about which there are dense infiltrations of lymphocytes and plasma cells. Giant cells are present in varying numbers. The endothelium of the capillaries is swollen or proliferated, so that the lumen is narrowed or even obstructed. The histologic picture, therefore, is that of any chronic inflammation and is in itself by no means pathognomonic unless one succeeds in demonstrating Spirochaeta pallida in the tissues.

Generally it is thought that primary and secondary lesions of the cervix produce few if any symptoms. However, Gellhorn[16] and Morrison[17] noted a loss of appetite, fever, articular pains, malaise, abnormal vaginal bleeding and serosanguineous leukorrhea. The patient with tertiary syphilis, on the other hand, complained of bleeding of four months' duration as her only symptom. We noted in this series that the preceding symptoms were frequently present and responded immediately to antisyphilitic therapy.

Syphilitic lesions are important, since many are clinically mistaken for erosions and carcinoma of the cervix. It must not be forgotten, as Warthin[18] has insisted, that carcinoma and syphilis of the cervix coexist frequently. By the same token other granulomatous lesions of the cervix have been observed concomitantly with syphilis of the cervix.

The diagnosis of primary and secondary lesions depends on the finding of S. pallida by dark field examination, since serologic tests are not always positive until three weeks after the initial infection. The tertiary lesion is diagnosed by biopsy and positive serologic tests.

Recognized antisyphilitic therapy is advocated for all syphilitic lesions of the cervix.

CHANCROID

Chancroid of the external female genitalia is common, but this type of cervical infection is rare. We were able during the last six months of this study to establish the presence of this entity in 2 white women. A search of the literature reveals only Day's[19] report of 2 cases. Like the other granulomatous lesions of the cervix, the rarity of this entity is probably due more to a lack of examination and diagnosis than to an actuality. Chancroid, or ulcus molle cutis, is a highly infectious, localized lesion caused by inoculation with Hemophilus ducreyi, a gram-negative bacillus appearing singly or in short chains. The so-called histologic changes of chancroid are generally believed to be nonspecific. However, Heyman, Beeson and Sheldon[20] have contended that there is a specific histologic pattern. In their opinion the lesion consists of three zones. The surface zone, or base of the ulcer, is shallow and made up of polymorphonuclear leukocytes, fibrin, red blood cells and necrotic tissue. Below this is a fairly wide zone of edematous tissue with endothelial cells in various stages of proliferation outnumbering all other cellular components. Numerous newly formed blood vessels may show palisading with occasional degeneration of the vessel walls and thrombosis. Finally there is a deep zone with a dense infiltration by plasma cells and lymphocytes.

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[13] Ricord, P., cited by Pusey, W. A.: History and Epidemiology of Syphilis, Springfield, Ill., Charles C Thomas, Publisher, 1933.

[14] Davies, T. A. Primary Syphilis in the Female, London, Oxford University Press, 1931.

[15] Sharp, J. W., Alexander, L. J., and Schoch, A. G.: Dark-Field Examination of Lesions of the Cervix Uteri in Diagnosing Early Syphilis, Urol. & Cutan. Rev. **47:** 171 173 (March) 1943.

[15a] *From the Dallas Venereal Disease Clinic of Parkland Hospital*

[16] Gellhorn, G.: Syphilis of Cervix, J. A. M. A. **87:** 1812 (Nov. 27) 1926.

[17] Morrison, M. T.: Chancre of the Cervix, Am. J. Syph. & Neurol. **18:** 196-203 (April) 1934.

[18] Warthin, A. S., and Nolan, L.: Differential Diagnosis of Chancre and Carcinoma of the Cervix, Am. J. Syph., Gonor. & Ven. Dis. **5:** 553 562, 1921.

[19] Day, L.: Chancroid of the Cervix: Report of Two Cases, Proc. Staff Meet., Mayo Clin. **20:** 70 71 (March 7) 1945

Symptoms include soreness in the lower part of the abdomen, a foul, grayish vaginal discharge and burning and pain in the vagina. On examination there may or may not be ulcers of the external genitalia and inguinal lymphadenopathy. Pronounced vaginal tenderness is present to such an extent that the patient will not permit adequate bimanual examination. The cervix appears to be red and edematous with one or more round, firm, punched-out, ulcerated lesions on the portio. The ulceration may be covered with an easily removable whitish exudate. In some instances similar lesions are present in the vaginal vault.

Diagnosis is made by smear, culture, Ito-Reenstierna skin test and biopsy. In a series of 175 cases Kornblith[21] and his co-workers reported that smear was the best single criterion of diagnosis, with specific identification possible in 88 per cent of cases. In advanced cases, especially in women, on the other hand, smears are frequently crowded with many bacteria and diagnosis is often impossible; the United States Army does not recommend them.[22]

Heyman, Beesen and Sheldon[20] obtained positive cultures in 40 per cent of their cases using defibrinated rabbits' blood as a medium. Skin tests alone are of limited diagnostic value.

The efficacy of biopsy in the diagnosis has recently been stressed in advanced lesions.[20] In our 2 cases positive diagnosis was made by the finding of H. ducreyi and by positive skin tests. Confirmation of the diagnosis was obtained by biopsy in 1 case.

Treatment consists of the administration of sulfathiazole parenterally and locally for seven to ten days.

CONCLUSIONS

1. Infectious granulomatous lesions of the cervix are more commonly present than has previously been suspected.

2. The improvement of diagnostic facilities has made specific diagnosis of these lesions possible.

3. When a clinical diagnosis of carcinoma of the cervix is not substantiated by microscopic examination, one of the granulomatous lesions should be suspected.

4. The importance of specific diagnosis rests in the fact that the clinical course, therapy, psychologic effect on the patient and prognosis are vastly different from those for carcinoma.

ABSTRACT OF DISCUSSION

Dr. William B. McGee, San Diego, Calif.: Two women came into the hospital for biopsy of the cervix, with the impression of carcinoma. The attending physicians were so sure that these women had carcinoma that they inserted radium at the time of the biopsy. By the time the biopsy came back as a granulation tissue the patients had already received radium in a fairly large amount. It was learned from these 2 cases that the use of radium is contraindicated in the noninfectious granulomas, because both patients became progressively worse. The problem that I and my associates had in the differential diagnosis of our 8 cases (a series including the 2 just mentioned) was between granuloma and tuberculosis, which are easily differentiated. In tuberculosis instead of a decided infiltration of polymorphonuclear leukocytes there is a pronounced infiltration of lymphocytes, tubercles, giant cells and caseous material. Tuberculosis of the cervix is almost always secondary to tuberculosis in the body elsewhere, and the cervical infection is usually secondary to that in the fallopian tubes. If tuberculosis can be ruled out in the chest, the gastrointestinal tract and the genitourinary tract, and there is a positive diagnosis of tuberculosis of the cervix, then the patient should have an exploratory laparotomy; if tuberculosis is found in the pelvis, then she should have a radical surgical operation. Another differential diagnosis which Dr. Guerriero did not mention is a decidual reaction which is occasionally seen on the cervix in pregnant women. Here, the diagnosis is made by microscopic section and the condition requires no treatment, as it is a self-limiting disease and disappears at the end of the pregnancy. The question of syphilis as a differential diagnosis from granulomatous lesions of the cervix is a difficult one. The early syphilitic lesions appear grossly as an extremely early cancer, and the later tertiary lesions of the cervix, the gummatous lesions, look decidedly similar to carcinoma. Here again microscopic study provides a definite diagnosis, revealing giant cells, lymphocytes and decided changes in the blood vessel walls. The lesions respond, as Dr. Guerriero told you, to the antisyphilitic treatment. Most of the reports on granulomas have come from the South. Physicians will definitely see more of these lesions in other parts of the country. With mass migration of war workers and military personnel to all parts of the country, these granulomatous lesions will be seen in other parts of the country, although I question if the Donovan body will live in this wonderful California climate.

Dr. William F. Guerriero, Dallas, Texas: I want to thank Dr. McGee for his able discussion, because as an intern under him in 1934 and 1935 some of my stimulation for this work was aroused. Dr. Williams' paper interested me very much because I was afraid, in presenting such a subject, that it might not be of general interest to the Section. However, with the mass migration of the Negro from the South to the North and to the West, as Governor Jones of Louisiana has shown, it may be necessary for all the practitioners of medicine to become familiar with these diseases. These lesions are not uncommon, as was shown by the high incidence in this series. One must be ever conscious of these lesions because in medical practice today, particularly in obstetrics and gynecology, one usually thinks only in terms of the common lesions of the cervix or carcinoma. By making the proper diagnosis these lesions can be treated adequately to offer the patient a good prognosis. In most instances, one must rely on the pathologist, as the clinical signs and symptoms definitely resemble carcinoma and other cervical lesions.

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Special Article

HISTORY OF THE AMERICAN MEDICAL ASSOCIATION

MORRIS FISHBEIN, M.D.
Editor, Journal of the American Medical Association
and Hygeia, the Health Magazine
Chicago

(Continued from page 771)

(NOTE.—*Following is the twentieth chapter of a history of the American Medical Association in process of development for publication in connection with the celebration of the Centennial of the American Medical Association in Atlantic City in June 1947.*

The general account of the history of the Association will be followed by individual histories of the various councils, bureaus, publications and other activities of the Association. The general account is written by the editor of THE JOURNAL. *Each of the other historical contributions will be by a member of the individual council, bureau or agency responsible and now associated with it or directly related to its work. Included will be photographs, signatures and a brief biography of each of the hundred presidents of the American Medical Association. This feature has been prepared by Dr. Walter L. Bierring.*

It will be impossible to publish all of the material in THE JOURNAL. *The complete work will be published in book form. It is hoped to have it available by the time of the annual session.*—ED.)

CHAPTER 20. *The War*

1915-1919

1915

SAN FRANCISCO

Late in 1914, as one of its many exposés of "patent" medicines, THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION published a report on a product manufactured by the Chattanooga Medicine Company of Tennessee called "Wine of Cardui." The article had been prepared as a joint effort of the laboratory of the Association, the Council on Pharmacy and Chemistry, the Division of Propaganda for Reform and the editorial department. The facts stated were so challenging that the owners of the Chattanooga Medicine Company (the Patton family, one of whom was a leader in the Methodist Church South) sued for libel. The record of the suit is told in another chapter. The company also sued Dr. Oscar Dowling, who was secretary of the state board of health in Louisiana. The Board of Trustees determined to make a complete defense in the case and the attorneys for the American Medical Association—Loesch, Scofield and Loesch—were instructed to take charge. Because the proprietors of secret nostrums were now attacking the citadel of American medicine, the Board of Trustees appointed a committee to prepare a special report to the medical profession for presentation to the House of Delegates.

PHYSICIANS AND PUBLIC HEALTH

In opening the annual session for 1915, Dr. Victor C. Vaughan emphasized particularly the need for improvement of postgraduate medical education. He felt that the medical profession might be losing its prestige in relationship to the great advances that were being made in preventive medicine. In Michigan, for instance, the campaign against tuberculosis was being led by a group of whom three were not physicians.

The Board of Trustees indicated that the rapid extension of the interests of the Association had so affected its financial status that profits were reaching the vanishing point. The entire profit for the year was less than $4,000. While its work was altruistic, the Board warned the Association that the expenses must not increase but should decrease.

HOUSE OF DELEGATES ATTACKS NOSTRUMS

For the first time in the report of its activities to the House of Delegates a special section was introduced on the law suits of the Association. As has already been mentioned, these will be covered in a special chapter of this history. However, in accordance with the action taken by the Board of Trustees at its session in February, a special report had been prepared on the work of the Council on Pharmacy and Chemistry by a committee of the board, including Dr. W. T. Councilman, Dr. W. W. Grant and Dr. M. L. Harris. Following the presentation of this extensive report the Board of Trustees offered a resolution:

> *Resolved*, We, Members of the House of Delegates of the American Medical Association, believe that every effort must be made to do away with the evils which result from the exploitation of the sick for the sake of gain. Earnestly believing that the continued toleration of secret, semisecret, unscientific or untruthfully advertised proprietary medicines is an evil that is inimical to medical progress and to the best interest of the public, we declare ourselves in sympathy with, endorse and by our best efforts will further the work which has been and is being done by the Council on Pharmacy and Chemistry of the American Medical Association in the attempt to eliminate this evil.

The House of Delegates not only endorsed fully the activities of the Council on Pharmacy and Chemistry and of the Board of Trustees in furthering its work but also advised all members of the medical profession to withhold their support from periodicals that advertised proprietary remedies not investigated and accepted by the Council.

SOCIAL INSURANCE

The report of the Judicial Council, under the leadership of Dr. Alexander Lambert of New York, was one of the most extensive in the history of the Association. This report was to have a tremendous effect on the future activities of the Association; it covered such serious topics as the disciplining of Fellows of the Association who received commissions from the manufacturers of drugs and instruments and who thus violated the Principles of Ethics. An elaborate report of many pages dealt with workmen's compensation laws, social insurance in Europe, compulsory sickness insurance and other forms of protection against the hazards of disease and injury. Many pages dealt with industrial insurance in the United States. Attention was called to the difficulties of European physicians, particularly those in Germany, in maintaining a high standard of medical care, insuring free choice of physician and similar basic factors. In concluding its report the Judicial Council stated that its whole purpose was education of the medical profession concerning the trend. The Judicial Council said "In whatever country the social equilibrium has been upset by new laws of compensation there have followed in the wake of compensation for accidents other insurances tending toward the complete insurance systems of England and Germany." The Judicial Council called attention to articles by I. M. Rubinow on social insurance and the medical profession which had been published in THE JOURNAL, and it continued "It is evident, therefore, that once the old social and legal equilibrium has been upset, society tends to follow to the logical conclusion until it reaches a new equilibrium under a new social system." The Judicial Council indicated that we had in the United States a disjointed mass of insurance schemes and pension systems and that in several countries abroad these various social elements had been combined into a single form. The report said:

> In several countries abroad the same various social elements have been combined into some form of workable adaptability by which various accident and sickness insurance, invalidism and old age pensions have been brought together to form social forces which have tended to reduce the destitution of large masses of human beings. These forces unquestionably tend to improve the social condition in any given community, and, for the carrying out of any scheme tending to human betterment, the medical profession must necessarily be included, whether it be to judge of sickness or health insurance, whether it be for the prevention of the intensity of injury in the individual from accident or for the prevention of the spread of disease in a community at large. The medical profession will accept its responsibility in these new social conditions as it has always accepted its responsibilities in the past. The Judicial Council therefore presents this abstract of existing social insurance in this country and abroad.

The reference committee which considered this report recommended that the constituent state societies bring it to the attention of their members as a *"vade mecum* on these important social economical problems."

THE COUNCIL ON HEALTH AND PUBLIC INSTRUCTION

Again the Council on Health and Public Instruction had an extensive report on public health conditions in the United States, public education, the vast work of its speakers' bureau, its bureau of literature, its sections on legislation (both state and federal) and on the work of its many subcommittees. The Council felt that the most valuable work it had done was the coordination and harmonizing of the work of different organizations. There were reports of committees on women's and children's welfare, cancer, expert testimony, the National Education Association, the conservation of vision and similar subjects.

REORGANIZATION OF SECTIONS

Significant also at this session was the effort of a committee headed by Dr. Hugh Cabot to reorganize the work of the scientific sections. The Association must provide not only for the highly trained specialists but also for great numbers of general practitioners to whom it represented their one scientific organization. The committee recommended the establishment of a standing committee or council on section work. This recommendation was accepted by the House of Delegates. The result was the establishment of the Council on Scientific Assembly, which has, since that time, been of the utmost significance in advancing the scientific programs of the Association.

INFANT FOODS

Much attention was attracted by a resolution to control the advertising of proprietary infant foods. Several resolutions urged participation by the Association in the work of medical milk commissions with a view to improving the quality of milk supplied to the nation.

THE NATIONAL BOARD OF EXAMINERS

In his address at this session of the Association Dr. William L. Rodman had recommended the establishment of a national board of medical examiners. The committee to which the report was referred recommended that it be submitted to the House of Delegates for approval. A minority report suggested reference instead to the Council on Medical Education. This report was adopted and the American Medical Association took part, through the Council, in the establishment of the National Board of Medical Examiners.

HARRISON ANTINARCOTIC LAW

The antinarcotic law known as the Harrison Law had been passed and approved on Dec. 7, 1914. The Council on Pharmacy and Chemistry recognized the weaknesses of this law in permitting the sale and use of narcotics when contained in proprietary and stock preparations. On recommendation by the Board of Trustees, the House of Delegates took action to bring this matter to the attention of the Congress of the United States, so that the indiscriminate sale of proprietary and other preparations containing narcotics should not be permitted.

GRADUATE INSTRUCTION

In his address to the House of Delegates President Victor C. Vaughan had indicated the great desirability of participation by the American Medical Association in sending teams of clinical teachers to the individual states to bring general practitioners up to date in medical practice. The Board of Trustees was told to take the matter in hand. Out of that suggestion came a procedure still followed in many states for extending graduate education of physicians in rural areas.

1916

DETROIT; SICKNESS INSURANCE

The first subject to come before the meeting of the trustees early in 1916 was national legislation on sickness insurance. Drs. Alexander Lambert and Henry B. Favill appeared before the board to speak on the subject. Bills had already been introduced in Massachusetts and New York. It was recognized that the relation of the medical profession to any plan of sickness insurance was vital. A special committee appointed jointly by the Council on Health and Public Instruction and the Judicial Council was established to have charge of this investigation; the Board of Trustees requested submission of the plan and of a budget.

The agitation for a presiding officer in the House of Delegates was brought before the Board of Trustees; the Board rightly said that the decision would have to be made by the House of Delegates.

The joint committee on sickness insurance presented a statement. It pointed out that the purposes and duties of this committee would be to make a careful compilation of information concerning health and social insurance and the relation of physicians thereto and to do everything in its power to secure such constructions of the proposed laws as will work the most harmonious adjustment of the new sociologic relations between physicians and laymen which will necessarily result therefrom. The committee was given great power to study and to act and an adequate budget to meet all of its needs. It was also recommended that full publicity be given to its work.

In the course of the year President Rodman had died; the vice president, Dr. Albert Vander Veer of Albany, then over 80 years old, served thereafter as president.

ADVERTISING BY PHYSICIANS

As an indication of its seriousness in considering infractions of the Principles of Ethics, the Judicial Council reported publicly that it had taken action in 2 cases involving the charge of grossly advertising in the public press. One of these involved a physician of Wichita, Kan., who was dropped from the Fellowship roll of the American Medical Association. The second case was that of a former President of the Association, Dr. John B. Murphy of Chicago. Charges had been brought before the Judicial Council that the accused had caused or permitted to appear in a publication with which his name was connected photographs and an article which violated the Principles of Medical Ethics in that they were self laudatory and defied the traditions and were contrary to the ideals of the medical profession. The Judicial Committee condemned this publication as being offensive and in bad taste. Because the testimony indicated that the publication complained of was not intended by the accused to be self-exploiting advertising, the Judicial Council accepted his explanation and apology.

MEDICAL PREPAREDNESS

The most important aspects of the address made by Dr. Vander Veer concerned the preparedness of the medical profession in relation to the threat of war. As Acting President of the Association he had cooperated with other organizations in appointing a strong committee of American physicians to consider plans for civilian medical preparedness. Repeated conferences had been held. Already suitable boards and committees had been established to confer with the President of the United States and to offer to him the services of the medical profession. President Wilson had expressed himself as much pleased with the patriotic actions of the medical profession and assured Dr. Vander Veer that the government would avail itself of the services that were tendered. Base hospitals were being formed, and four such units were ready for mobilization.

PROHIBITION

Through the office of the secretary there came to the House of Delegates a plea for cooperation by the medical profession in combating the liquor evil.

THE BOARD OF TRUSTEES

In its report to the House of Delegates the Board of Trustees called attention to the relationship of the profession to the social state. The Board indicated that it had granted a considerable sum of money mainly for acquiring information. The Board of Trustees said:

> We are entering on a period of great changes in social organization; a period which will necessitate a far closer organization of the people in all forms of activity, and this particularly calls for united strength in opposing disease. It is true we have not so strongly felt the necessity for this as have other nations, but the time has come when we can no longer resist the social movement, and it is better that we should initiate the necessary changes than have them forced on us. On such information, laws regulating social medicine, which will be just both to the medical profession and to the public, whom it serves, must be based. All of our councils have worked in perfect harmony with other bodies, often outside of the profession, which have had the common good in mind.

SPEAKER OF THE HOUSE OF DELEGATES

The Judicial Council recognized the desirability, if not necessity, of having for the House of Delegates a presiding officer familiar with the transactions and also with the best methods of expediting the work of the House. The Judicial Council, therefore, recommended that the House take up the election of a speaker and proposed the necessary amendments to the Constitution and By-Laws to make this possible. The House of Delegates approved these recommendations.

COUNCIL ON HEALTH AND PUBLIC INSTRUCTION

In furtherance of the obligations placed on it, the Council on Health and Public Instruction had made a survey of state public health activities begun in 1914 by Dr. Charles V. Chapin. This included a rating sheet of the forty-eight state health organizations and exhaustive tabulations of their various activities, appropriations and expenditures. This action marked the beginning of a movement for elevation of the field of public health as did the first report of the Council on Medical Education in education. A request had come for a similar survey of municipal health departments, but the Council had not been able to devise any feasible plan for the purpose. An attempt had been made also to survey voluntary public health organizations. Such a report had been prepared and published and it had been accepted by the American Public Health Association.

The committee was discharged and a new central committee on public health organization was established to continue such studies. The efforts of the Council in the direction of cooperation had borne fruit; many leading organizations were cooperating fully with the medical profession.

Significant was the report of the subcommittee of the Council dealing with social insurance! Understatement indeed was the opinion that this subject would in all probability be one of the most important to occupy the attention of the medical profession in the next few years both from an economic and from a medical point of view.

The Council had secured the services of I. M. Rubinow, Ph.D., who was chief statistician of the Ocean Accident & Guarantee Corporation and president of the Actuarial Society, as an executive secretary; it had opened a bureau for study of social insurance in New York City. The Council presented a statistical study of the medical profession of the United States. It pointed out, however, that there were not available reliable figures concerning the incomes of physicians and other economic facts of interest. It proposed

> to educate the American medical profession in the general principles of social insurance, particularly health insurance, the economic and social significance of the movement to obtain such insurance throughout the United States, and the absolutely essential part which the medical profession must play in a successful adaptation of this new legislation to American conditions.

It seems to have been rather taken for granted that such compulsory sickness insurance laws would be passed in the United States. The committee felt that it should work to avoid the conflicts that had arisen in England at the beginning of a similar movement and which had resulted in a large amount of bitterness between the profession and the public that might easily have been prevented by properly conducted activities.

In its report on social insurance the committee, under the chairmanship of Dr. Alexander Lambert, presented a statement more than thirty-five pages long opposing voluntary sickness insurance and agreeing that only compulsory state insurance would reach the group of people who needed help most. It then discussed in detail the compulsory insurance schemes of all foreign countries in which such systems prevailed, with the majority of the emphasis on the comprehensive system in Germany. The major portion of this extensive report had been prepared by Dr. Rubinow. The report concluded with a consideration of conditions prevailing in the United States for protection against the hazards of sickness among trade unions, lodges, fraternal societies, commercial insurance companies and similar agencies. The report was inclined to accept the conclusion of Drs. B. S. Warren and Edgar Sydenstricker that the democratic character of an effective health insurance system is most pronounced in a governmental system. It was agreed that the experience of European nations with health insurance had shown that governmental systems were the only systems which accomplished the purpose desired. Then came the health insurance act developed by the American Association for Labor Legislation. The report concluded with a general comment to the effect that it had made no attempt to bring together the advantages or disadvantages or to argue for or against health insurance. It favored the German system over that in England and it said

> However one may criticize the details, the insurance act has unquestionably improved the health of the working classes which have come under the law.

When this extensive report was turned over to the Reference Committee on Legislation and Political Action, under the chairmanship of Dr. E. J. Goodwin of Missouri the reference committee recognized the exhaustive character of the report. It was proposed that the Council on Health and Public Instruction should continue to study the subject and to educate the profession concerning it. The reference committee approved such study and approved further establishment by each state association of a committee on social insurance to work in conjunction with the Committee on Social Insurance of the American Medical Association.

COUNCIL ON MEDICAL EDUCATION

Again the Council on Medical Education indicated its progress in merging poor medical schools, raising standards of education and eliminating schools of quackery. Here is a striking statement:

> The largest number of these institutions at present is found in Illinois, where conditions are especially favorable. Besides the class C medical schools which continue to exist there are in Illinois colleges of osteopathy, chiropractic, chiropody, naprapathy, somopathy, physcultopathy, refraction, optics and a legion of others, most of which have for their chief inducement elegantly printed diplomas conferring the degree of "doctor" of this, that or the other. The courses offered for such degrees are in some instances so notably a makeshift as to be ridiculous, and an insult to education. Some are offering courses under two or more titles, and others appear to be doing a retail business in dispensing degrees in all the "forms" or "systems" of healing which may have been or ever shall be enumerated.

The report urged the various states of the nation to protect themselves against such low grade institutions.

Pursuant to the recommendation that had been made by Dr. Rodman, the Council on Medical Education reported the organization of the National Board of Medical Examiners with the assistance of the Carnegie Foundation for the Advancement of Teaching.

A special committee to cooperate with the Red Cross had drawn up a complete arrangement for medical service through the Red Cross.

PUBLICITY AND THE ELECTION OF PRESIDENT

Much furor occurred in the House of Delegates at the meeting to elect officers when a Detroit newspaper announced that Dr. Charles H. Mayo would be elected President three or four hours before the election was held. The publicity had been issued without any activity on the part of Dr. Mayo; he was unanimously elected.

FROM THE MOUTH TO THE STOMACH AND RECTUM

As a recognition of changes in medical interest, the Section on Stomatology was discontinued and a new Section on Gastro-Enterology and Proctology was established.

THE WORLD WAR

The war was prominent on the final day of the convention. Physicians were informed that a citizens military training camp had been established at Fort Benjamin Harris, Indiana, to instruct doctors in field hospital and sanitation work. Citizens who wished to volunteer to attend this school could do so by paying $1 in addition to the cost of the uniform.

QUARTERLY CUMULATIVE INDEX MEDICUS

During 1916 the support of the Carnegie Foundation for the *Index Medicus* had been discontinued; as a result this valuable tool for workers in medical research was discontinued. At this time Dr. George H. Simmons, as a result of many conferences in Washington and elsewhere, proposed that the American Medical Association establish an index medicus to be published quarterly and cumulated. This would be a large responsibility for the Association. Dr. Simmons presented his proposal to the Board of Trustees, which authorized him to proceed with the publication. The full story of the QUARTERLY CUMULATIVE INDEX MEDICUS is told in another chapter.

ADMINISTRATION OF PATENTS

A resolution was passed by the House of Delegates authorizing the American Medical Association to accept and administer patents. Dr. E. C. Kendall of the Mayo Clinic had just discovered thyroxin, the active constituent of the thyroid, and wished to award the patent to the American Medical Association. This patent was accepted. At a later date, however, it was realized that the function was quite outside the scope of a body such as the American Medical Association. The patent was returned, and the Association has not since undertaken such an activity.

Dr. Charles Mayo, now President of the Association, offered the Association $25,000 which had been contributed by Mr. R. T. Crane for the discovery of the cause and best cure of infantile paralysis. The Association tentatively accepted the funds and the obligation.

1917

NEW YORK CITY

By 1917 the Scientific Exhibit had grown so greatly that the recommendation was made to the Board of Trustees that there be established a special committee on scientific exhibit. The story of the Scientific Exhibit is told also in another chapter.

In this year action was adopted that all papers read at the annual session be treated as volunteer contributions and that they be published in full in THE JOURNAL or rejected or published in abstract, as might seem best. This step was fundamental in improving the quality of THE JOURNAL.

Petitions had come for the publication of journals devoted to ophthalmology and otolaryngology; the board took these under advisement.

The Committee on Social Insurance had found itself heavily obligated because of the thousands of studies necessary. It indicated a wish for additional funds and also the necessity for a full time executive secretary.

When the Association convened in New York in the midst of the war the President of the Association, Dr. Rupert Blue, Surgeon General of the U. S. Public Health Service, told of the activities in which he had participated in the prosecution of the war. Committees had been set up in the various states to cooperate with the Red Cross. A committee of three, consisting of Drs. Arthur Dean Bevan, Alexander Lambert and J. W. Kerr, had been constituted to report on the best way of utilizing the records and activities of the American Medical Association. Letters had been addressed to the presidents and secretaries of all the component medical societies urging them to secure medical officers for the armed forces.

THE FIRST CHAIRMAN OF THE HOUSE

The first chairman of the House of Delegates, Dr. Hubert Work, presided. In his opening address he announced his concept of the functions of the office. His was a statesmanlike presentation, free from any political connotations. It established the standards for functioning of the speaker of the House of Delegates since that time.

Most of the report of the Board of Trustees was concerned with the problem of publication of the section papers. Their number had become overwhelming; the price of paper had grown so greatly that it was not possible with financial safety to publish all the papers. The Board of Trustees informed the House of Delegates that it had passed the resolution relative to volunteer contributions. The editor had been authorized to refer highly specialized papers to the special journals. The board also announced its decision to publish a journal of ophthalmology and otolaryngology.

THE LIBEL SUIT

Then came a report on the defense against the libel suit, which had lasted thirteen weeks. The result was satisfactory not only by the moral standard but also in its financial aspects. Nevertheless the cost of the trial was so great that the auditor's report showed for the first time in twenty-five years an operating loss in the finances of the Association. Fortunately the expense was met largely out of current receipts without impairing the reserve funds of the Association. Nevertheless the Board said:

> This trial demonstrated the wisdom of having a large reserve fund on which to fall back, for the existence of this fund gave courage to carry on a vigorous defense to a successful end. This leads us to suggest that the reserve fund should be still further increased. In times of adversity the absence of such a fund might badly cripple us or force us to suspend temporarily all altruistic work. Not all years are "fat" with prosperity; "lean" years are bound to come, against which provision must be made. No one can foretell the end of the critical period upon which this country has entered; but it is easy to foresee the possibility of a diminished income to the Association. It is quite possible that a large number—perhaps several thousand—of our Fellows will be called to the front for an indefinite period, during which time it is more than likely that there will be a considerable falling off in the subscriptions to The Journal. Hence it behooves us to husband our resources that there may be no interruption in our more desirable and important activities.

In concluding its report the Board of Trustees presented a memorandum on the death of Philip Mills Jones of San Francisco on Nov. 27, 1916. He had attended a meeting of the Board of Trustees on November 3 and was in his usual good health. Then within three weeks he was dead from pneumonia, and his wife died from the same disease within twenty-four hours. Dr. Philip Mills Jones had become one of the most ardent advocates of clean advertising, although previously favoring a national joint council. He had become so interested in the legal aspect of medical problems that he took up the study of law late in life; in the year previous to his death he had been admitted to the California bar.

THE WAR CHECKS ACTIVITY

As temporary chairman of the Council on Health and Public Instruction, Dr. Frank Billings presented the report which was greatly condensed, occupying now only two pages of The Journal. Dr. Frederick R. Green, who had been most active as secretary of this body, had volunteered for military service and had been given a leave of absence by the Board of Trustees. The demands of the war had greatly curtailed all the activities of the Council. Nevertheless, the committee on social insurance presented a report occupying thirty-five pages under the auspices of Dr. Alexander Lambert, the chairman. Two state commissions—California and Massachusetts—had investigated health insurance and had reported favorably on it. Health insurance measures had been introduced into the legislatures of fourteen other states. Most of the extensive report dealt with conditions in Germany. It considered not only health insurance but old age protection and unemployment insurance. The pattern in foreign countries had been a beginning with voluntary insurance, which proved inadequate, then voluntary insurance subsidized by the state, which, although more successful, was still inadequate and, finally, full compulsory insurance. Poorly concealed throughout this report is a plea for early adoption of compulsory sickness insurance in the United States. For instance, the report said:

> Regarding social insurance as a whole, this country is still in the stage of investigation, but the rapidity with which, after a few years—less than a decade—protection against industrial accident was taken up and adopted shows clearly that when the idea is once understood and grasped how rapidly it appeals to all nationalities, although a few years ago the accident insurance was condemned as un-American and the same adjective is being used against the other forms of social insurance today as they are discussed. It has been a noticeable feature that all official investigations in this country have led to the approval of at least the basic principle in the movement for social insurance. There is no question that the enormous modern industrial development has increased the hazards of the wage earner and has increased also the dependence of a large part of the population on their own physical well-being and working capacity. This country today still possesses the strongest development of individualism, but so great has been the collective development of industry and so strong the collective development of labor that the collective protection of the individual against a universal hazard has found ready and vigorous support.

In concluding its report the Council condemned the *Boston Medical and Surgical Journal* for suggesting that medicine be eliminated from social insurance laws. It felt that the intense reaction in many states against sickness insurance or further expansion of social insurance laws in this country was due to the unjustness and cold blooded methods of unfairness under the workmen's compensation laws. The report said, in part:

> Blind opposition, indignant repudiation, bitter denunciation of these laws is worse than useless; it leads nowhere and it leaves the profession in a position of helplessness if the rising tide of social development sweeps over them. The profession can, through its influence in the community, prevent for a time these laws being passed and it can, by a refusal to cooperate, still further retard them, but in the end the social forces that demand these laws and demand an improvement in the social existence of the great mass of the people of the nation will indignantly force a recalcitrant profession to accept that which is unjust to it and that which is to its detriment.
>
> The profession today, in certain states, is acting the part that our school boy history showed of old King Canute sitting on the seashore bidding the rising tide to stop, and King Canute only got wet for his trouble.

The report ended with a resolution:

> *Resolved,* That the House of Delegates of the American Medical Association in the interests of both the wage earners and the medical profession authorize its Council on Health and Public Instruction to continue to study and to make reports on the future development of social insurance legislation and to cooperate, when possible, in the molding of these laws that the health of the community may be properly safeguarded and the interests of the medical profession protected; and be it further
>
> *Resolved,* That the House of Delegates instruct its Council on Health and Public Instruction to insist that such legislation shall provide for freedom of choice of physician by the insured; payment of the physician in proportion to the amount of work done; the separation of the functions of medical official supervision from the function of daily care of the sick, and adequate representation of the medical profession on the appropriate administrative bodies.

The reference committee expressed its appreciation of this report and recommended the adoption of the resolutions, which recommendation the House of Delegates followed.

This was not a rejection of compulsory sickness insurance; it seems to have been a qualified acceptance. It favored the adoption of compulsory sickness insurance subject to acceptance of the principles related to medical practice which were involved. Behind this report was the influence of Dr. Rubinow. Later came complete repudiation.

THE SECTIONS

Attempts were still being made by the first Council on Scientific Assembly, which included in its membership Drs. E. Starr Judd, chairman, Roger S. Morris, George H. Simmons, J. Shelton Horsley and Alexander R. Craig, to organize and coordinate the work of the sections and to assign them relative importance in the number of papers permitted in each. An attempt was made, in fact, to adopt the system which prevailed in Great Britain by which some sections would meet twice, others as often as six times during the session. The reference committee of the House of Delegates accepted the report of the Council on Scientific Assembly with the exception of that portion which distributed units to the different sections. Some of the representatives of the various sections insisted that two units were too few; three units were made the minimum. Later in the session the Section on Preventive Medicine and Public Health objected to being limited to three units and asked for six units, which the House promptly gave it.

THE WAR

Now came resolutions on participation by the medical profession in the war, on the care of infants and children during the war, and on provision of insignia for medical students so that they could continue their studies without being called cowards and slackers.

Other resolutions concerned the operation of quarantine during the war and the appointment of a food commission to act in an advisory capacity to the government in controlling food supplies during the war.

ORGANIZATION OF ARMY MEDICAL SERVICE

In a statesmanlike address to the House of Delegates, Dr. Frank Billings urged the establishment of a committee of five to formulate resolutions whereby better protection could be given to guarding the health of our soldiers. The position of the medical officer in relationship to officers in the line was not such as made it possible for him to secure action on recommendations definitely concerned with the prevention of epidemics. The suggestion of Dr. Billings was unanimously adopted. Many years passed following World War I, and the same difficulties that caused so much distress at that time arose in World War II.

The House of Delegates gave complete support to the Board of Trustees in establishing new journals to be devoted to otolaryngology and ophthalmology.

AIDING THE DRAFT

A special meeting of the Boards of Trustees was called in October 1917 to consider a proposal submitted by the War Department through the Provost Marshal General requesting the aid of the American Medical Association in organizing medical boards to conduct medical examinations in connection with the draft. The Board of Trustees accepted the invitation to cooperate with the Provost Marshal General as presented in the letter from Lieut. Col. Hugh S. Johnson, Judge Advocate. A committee of three was appointed to cooperate: Drs. Hubert Work, M. L. Harris and E. J. McKnight. The action was submitted by telegram to the members of the House of Delegates. The committee was empowered to call a meeting of the representatives from every state medical association to discuss the selection of suitable men to constitute such advisory boards. The American Medical Association bore the entire cost.

DAVIS MEMORIAL FUND

Dr. William Allen Pusey appeared before the Board and spoke in behalf of combining the funds held to honor the memory of N. S. Davis by the American Medical Association and the Chicago Medical Society, with a view to establishing a lectureship.

THE POLIOMYELITIS PRIZE

Many applicants had applied for the prize of $25,000 offered by Mr. R. T. Crane to any one who would discover the cause and cure of infantile paralysis, but none had presented sufficient evidence to warrant his being given the prize.

WORLD WAR I

On April 7, 1917 The Journal of the American Medical Association noted that war was imminent and called on the medical profession for volunteers.

It published the reports dealing with the organization of the Council of National Defense and of the Committee of American Physicians for Medical Preparedness. Dr. Franklin H. Martin had, according to the reports, been selected by a committee of distinguished physicians as the medical representative on the advisory commission of the Council of National Defense. Dr. Frank F. Simpson had been selected as chief of the medical section of the Council of National Defense. Dr. Franklin H. Martin, as chairman, had created an advisory committee which included Drs. W. C. Gorgas, W. C. Braisted, Rupert Blue, J. R. Kean, W. H. Welch, W. J. Mayo and Frank F. Simpson. Dr. William J. Mayo had, in turn, become chairman of the American Physicians for Medical Preparedness, which had organized a special committee of nine men in each state and, under this, county committees. Obviously in this setup the headquarters organization of the American Medical Association had been rather definitely ignored. When it came to functioning, however, the committee was dependent on THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION as its voice and on the biographic files of the American Medical Association as the one available source for accurate information concerning the physicians of the United States.

In the issue for April 14 THE JOURNAL discussed in many editorials the organization of the medical department of the Army. The advisory commission of the Council of National Defense would have to utilize the county and state medical societies to carry out the mobilization, and THE JOURNAL urged full cooperation. By this time also Dr. Franklin H. Martin had decided to appoint a general medical board to cooperate with him in coordinating civilian medical activities and to advise with regard to fundamental medical problems in relation to the armed forces of the country. This board included a membership of twenty-four, among whom the only representative of the American Medical Association was Dr. George H. Simmons. In the April 14 issue of THE JOURNAL a special department was created entitled "Medical Mobilization and the War." From that time on many pages were given in each issue to military problems.

In the issue for April 21, by which time war had been declared, THE JOURNAL published a form for application for the medical corps of the Army and also for appointment in the officers reserve corps. An editorial called on physicians of the country to meet the needs of the armed forces. There were reports on the work of the general medical board and on the standardization of general medical supplies; again many pages were occupied by information on medical military activities.

By this time THE JOURNAL began a series of articles which were prepared by Colonel McKnight, who had been assigned to the headquarters of the American Medical Association as a liaison officer. The series was entitled "The Medical Officer of the Army." Later the series of articles was collected in book form and widely used in extending knowledge of military activities to the civilian medical profession.

As the weeks went by THE JOURNAL adopted many technics for promoting interest in medical service, appealing with slogans and editorials to the medical profession. There had been an excellent response to the publication of the application blank. Clearly, however, the greatest function of the American Medical Association in mobilization had been the utilization of THE JOURNAL. Its officers had been largely ignored in places of importance in the mobilization for war. Dr. George H. Simmons, the editor, had been assigned a relatively inconspicuous position on the subcommittee which had to do with assignment of personnel.

It would be impossible to overemphasize the tremendous value of THE JOURNAL, with its extensive circulation, as the important medium in maintaining the dissemination of information concerning military activities and in inspiring the medical profession to the utmost fulfilment of its obligation. The names of all physicians who were enrolled and their assignments to camps were promptly recorded. Special articles dealt with almost every phase of military service. The organization of the base hospitals and the enlistment of physicians in their units were constantly recorded. The formation of the medical officers training camps was fully described, and visits were made to these camps for full reporting of their activities. Special articles were published from the officers in charge of the British and French medical departments. THE JOURNAL enlisted in the campaign for conservation of food. One finds, late in 1917, full page photographs of the medical officers training camps and all of the physicians in attendance. Once more began the campaign for adequate rank for physicians. Week by week the news from every medical front was reported. It is doubtful that there could have been any single effort more important in maintaining medical morale than were the many pages assigned by THE JOURNAL to medical military activities. THE JOURNAL published week by week the orders to medical officers. These were carefully systematized according to the individual states from which the officers came. It required an extensive organization in the editorial functions of the Association to carry out these activities. The Army itself developed no mechanism for contact with medical officers, nor did the Navy. THE JOURNAL during World War I published the photograph and biography of every physician who gave his life in the armed forces, and this procedure was followed also in World War II.

In April 1918 the American Medical Association called a war conference of the secretaries of the constituent state associations. By this time the government had realized the necessity of utilizing the American Medical Association more and more in the enrolment of medical officers. The primary purpose of the conference of secretaries was to enlist the necessary physicians to meet the national need.

An extraordinary contribution was publication by THE JOURNAL of June 1, 1918 of a complete list of civilian physicians in military service, with a tabulation of enrolment by counties and states. The Section on Miscellaneous Topics at the annual session in June was devoted wholly to the reconstruction and rehabilitation of disabled soldiers. When the annual session met in Chicago, a special feature was a military meeting held in the Medinah Temple, at that time the largest assembly hall in Chicago. Over this medical military meeting Dr. Arthur Dean Bevan, President of the Association, presided. Addresses were made by Gen. W. C. Gorgas, Sir James Mackenzie, Sir Arbuthnot Lane, Col. Herbert Bruce of the Canadian army, Major Edouard Rist of the French army, Capt. René Sand of the Belgian army, Admiral William C. Braisted, Surgeon General of the Navy, and President Ray

Lyman Wilbur of Stanford University. Dr. Wilbur was especially concerned with food. The final address was made by Major Alexander Lambert, who spoke of the work of the Red Cross.

Another meeting, known as the Patriotic Meeting, was held in the Auditorium Theater. Here Dr. Ludvig Hektoen, president of the Chicago Medical Society, presided, and addresses were made on "Science and the War" by Professor John M. Coulter of the University of Chicago, "The Law and the War" by Judge Charles S. Cutting and "American Ideals" by Bishop Charles P. Anderson.

As the war neared its end, The Journal became more and more concerned with problems of medical education. Fortunately the war ended in November. The brevity of the American participation made unnecessary the serious considerations that disturbed the profession during World War II, when medical education suffered severely. In World War I, 35,000 physicians had participated. Almost immediately with the end of the war, The Journal began calling for the formation of a competent medical reserve corps.

1918

CHICAGO

Early in 1918 the Board of Trustees was mostly concerned with its relationships to the Council on National Defense and to the office of the Provost Marshal. Few activities developed in the American Medical Association. As told elsewhere, Dr. Franklin H. Martin had been alert in hastening to Washington; leadership began and remained with him and leaders of the American College of Surgeons.

A SPANISH JOURNAL

Among new projects brought to the attention of the Board was the possible publication of The Journal of the American Medical Association in Spanish, to be circulated in South and Central American countries. Through negotiations by Dr. George H. Simmons with the Rockefeller Foundation, this project was undertaken; Dr. A. A. Moll was selected as editor and the choice of material was assigned to Dr. Morris Fishbein.

NEUROLOGY AND PSYCHIATRY

The Board of Trustees authorized also the publication of a journal of neurology and psychiatry, and an editorial board was selected for that periodical.

STANDARDIZATION OF HOSPITALS

It was suggested that the Council on Medical Education undertake standardization of hospitals.

AN AUTO EMBLEM

The Board authorized the manufacture and distribution of an automobile emblem for physicians.

WAR SERVICE

The editor and general manager or the secretary were authorized to visit Washington whenever necessary to coordinate more closely the activities of the Association with governmental departments. A special report was made by the war committee, and a resolution was introduced approving the creation of a world war medical conference organization.

THE WAR MEETING

The 1918 war meeting of the Association was held in Chicago in the offices of the American Medical Association. All five members of the Council on Health and Public Instruction and its secretary were in service, and the activities of the council had been limited to routine work. Its report was brief and the entire section on social insurance had disappeared. It is interesting to think what might have happened relating to social insurance if the war had not intervened.

The President, Dr. Charles Mayo, was also in the armed forces. He felt that there was bickering and disturbance in the profession and a lack of harmony, and he urged cooperation in the battle against Germany. The undercurrent of his address referred to the competition between Dr. George H. Simmons and Dr. Franklin H. Martin, although neither was mentioned by name. He pleaded particularly for coordination between the seventeen different government agencies concerned with medicine.

Dr. Hubert Work, chairman of the House of Delegates, spoke briefly on the war situation and announced that he would present later the report of the war committee. He called the selective draft "the colossal achievement of the times," and he paid high tribute to Gen. Enoch H. Crowder for his magnificent conduct of the draft and also to William C. Gorgas, Surgeon General of the Army.

The secretary of the Association, Dr. Alexander R. Craig, reported on the appointment of the war committee and recommended that it be continued so that it might act for the Association in all matters pertaining to placing the Association at the service of the government for the war. He indicated the numerous facilities in the headquarters of the Association which could be useful to the government and how particularly the biographic data had been utilized in finding physicians for the armed forces.

THE PUBLICATIONS

The Board of Trustees emphasized the growth of the publications and emphasized the number of law suits which had been filed against the organization and the manner in which they had been handled in the courts. The active work of the Association in codifying and supplying to the profession and the public information concerning quackery, fraudulent medicines and low standard medical colleges had resulted in threats, intimidation and actual suits. There were six libel suits in sums of $100,000 each.

THE LYDSTON CASE

The Board submitted also a complete record of the case that had been filed by Dr. G. Frank Lydston to oust the trustees of the American Medical Association from office because they had been elected outside the state of Illinois. That case had been decided by the Supreme Court of the state of Illinois in favor of the American Medical Association.

PATENTS

A fundamental decision reported by the Judicial Council objected to the acceptance of a patent by the American Medical Association. It declared against the patenting of a medical discovery for commercial gain, and it said "The ethics of patenting a medical discovery is not overshadowing or affected by the use to which the returns from the sale of the patented medicine may be put." Indeed, the Judicial Council declared that it was unethical for the University of Minnesota to accept patents on medical discoveries and that it would be unethical for the Mayo brothers on their part to consummate an agreement of this kind if they would be patenting a medical discovery and using the commercial proceeds therefrom to increase a fund given to the university by them.

The House of Delegates rejected the recommendation of the Judicial Council relative to patents, believing that the Mayo brothers had made their offer in good faith and in the spirit of altruism. It was felt that whatever the University of Minnesota did was a problem for the University of Minnesota.

A NURSE SHORTAGE

Already in World War I there began to be a shortage of nurses, and a resolution was submitted requesting the establishment of a committee to consider the whole question of registering and training nurses with a view to standardizing and simplifying the requirements and with a view to establishing a grade of practical nurses who would receive smaller compensation and take care of the sick, thus relieving graduate nurses for war work.

The meeting approved the commissioning of women physicians in the Army. A resolution was adopted, as offered by Dr. John Ridlon, urging universal military training before the right of suffrage was granted.

In 1918 an amendment to the Constitution had provided for changing the name of "chairman" and "vice chairman" of the House of Delegates to "speaker" and "vice speaker."

At the 1918 meeting Dr. Charles H. Mayo, who was at that time the President of the Association, introduced a resolution into the House of Delegates providing for an ad interim committee to deal with emergency problems, this committee to consist of the President, the president-elect, the chairman of the House of Delegates, the secretary of the Association, the last two living retiring presidents and the chairman of the Board of Trustees. He also proposed that the President of the American Medical Association be authorized to appoint members of committees not provided for by the House of Delegates or the Board of Trustees and that their work be passed on by the ad interim committee. The reference committee on amendments to the Constitution and By-Laws approved this amendment with the exception that they put the last two living ex-presidents on the committee and made it possible for committees appointed by the President to have official existence only until the next meeting of the House of Delegates.

In November 1918 a meeting of the war committee convened in Washington and was reconstituted as a meeting of the Board of Trustees. Since the Armistice had been signed, the war committee was instructed to take steps for using the American Medical Association to constitute a real medical reserve corps, and a special committee was developed for that purpose. When World War II came, the reserve corps had some 18,000 members, but unfortunately 9,000 were incapable of giving active service.

The Association planned for a Victory Meeting in 1919 with distinguished guests from abroad. It was suggested that the Department of State issue invitations to the allied nations to send delegates. Requests were made particularly to invite physicians from the South American nations.

1919

ATLANTIC CITY

Dr. Frank Billings reported for the committee which had been appointed to consider standardization of hospitals that it seemed desirable that such standardization be undertaken in cooperation with the American College of Surgeons. It was felt that it would be desirable to employ a full time man to do this work

SOCIAL INSURANCE

Then came the question of social and health insurance. A special message had come from the president of the Pensylvania State Medical Association and from Dr. Alexander Lambert indicating that the situation was becoming pressing. The statement by Dr. Lambert attacked particularly Dr. Edward H. Ochsner of Chicago, who had been the leading opponent of compulsory sickness insurance. Dr. Lambert attacked the Insurance Economic Society of America as the principal camouflage organization now conducting a vigorous campaign against social insurance. Dr. Wendell Phillips called attention to an editorial which had appeared in THE JOURNAL for Feb. 1, 1919 entitled "The Failure of Compulsory Health Insurance." He felt that it did not present the entire subject. Dr. Alexander Lambert, now president-elect of the Association, called attention to the eight pamphlets already published and to the four basic points which he felt must be included in any social insurance system which would be approved by the medical profession.

A SURGICAL JOURNAL

Now that the war had passed there came again a call for the publication of a special journal dealing with the philosophy of surgery in contradistinction to surgical technic. Dr. Lambert urged that such a journal would not be in competition with any journal then being published.

Conferences began to be held between representatives of the American Medical Association and the American College of Surgeons on the standardization of hospitals with a view to cooperation and avoidance of duplication.

In 1918 Dr. Frank Billings, who had served in many capacities, including the presidency of the Association, was elected to the Board of Trustees and his place on the Council on Health and Public Instruction was given to Dr. Ludvig Hektoen.

The Spanish journal had been conducted for three months with considerable success. The Association had distinguished itself in defending a suit brought by Jenner Medical Colleges for $500,000 damages.

It was felt desirable that the Board of Trustees publish regularly a digest of its minutes in THE JOURNAL and that it would have served a good effect on the medical profession if the report of the conference with the American College of Surgeons had been given adequate publicity in THE JOURNAL.

It became clear that little could be expected in the way of having delegates from foreign countries at the Victory Meeting. Response had been poor, and the secretary of the Association was authorized to send cables to various governments requesting attendance of foreign guests at the 1919 meeting.

The speaker of the House of Delegates made a long address in which he discussed the problems created by the war and the return of men from the war. He recognized the growth of groups of physicians in practice and the evolution of the hospital. He predicted that the greatest future concern of the Association might be in its direction and oversight of hospitals. He suggested the possible establishment of a council on hospitals to be concerned with control of such organizations and with a view to possible elimination of the joint survey of hospitals conducted by the American Medical Association and the American College of Surgeons. He recognized the problems created by the increasing length of the curriculum, and he feared that the duration of medical education was becoming too great. He was equally concerned with the difficulty of securing competent nurses at reasonable costs, and he viewed with alarm the tendency toward specialization and the disappearance of the general practitioner. He conceived it to be the duty of the American Medical Association to assure to the public qualified physicians, nurses and standardized hospitals at prices it could afford to pay. He spoke also of problems in the field of physical education, noting that 30 per cent of registrants appearing before local boards were rejected for military service—a situation which was still a matter of concern in 1946. He was especially concerned with the problems of dentistry as they related to the draft, and he thought the time ripe to give serious consideration to provision of medical care in rural areas.

Dr. Arthur Dean Bevan, who was President of the Association, had been chosen no doubt in recognition not only of his eminence in the field of surgery but also for his many years of leadership in the Council on Medical Education. Both Dr. Work and Dr. Bevan called attention to the manner in which physicians had pledged themselves to the nation for service. He indicated, however, that there must be much closer relationship between the national organization and the individual state organizations. Through the Council on Medical Education a national conference on hospital problems had been developed; this had been of great service through the years in clarifying problems in the hospital field. Dr. Bevan recognized the prominence of The Journal but he urged again particularly a periodical to be devoted to surgery. As will be seen later, this intensified the competition between the Association and the American College of Surgeons. Dr. Bevan felt that the publication of a surgical journal by the American Medical Association would merely tend to improve all other surgical publications in the field.

In his address as president-elect, Dr. Alexander Lambert announced that he had but two recommendations to make. He urged first a journal on surgery and, second, a popular journal in the field of health—thus intensifying the drive toward such a publication, which had been going on for many years. More particularly he then devoted himself wholly to problems of narcotic addiction; he recommended resolutions leading toward a national conference on the control of narcotic drugs.

The secretary of the Association, Dr. Alexander R. Craig, was concerned with the manner in which physicians returning from the war were being received by their communities.

The introduction by the American College of Surgeons of the letters F.A.C.S. to designate its members had raised the question of a similar designation for fellows of the American Medical Association. The secretary of the Association, therefore, proposed a variety of designations to indicate various qualifications of membership in the American Medical Association.

The Board of Trustees indicated great progress, first by the fact that there had been no loss of membership or subscription to The Journal during the war. The Spanish edition had been established and had reached a circulation of more than 1,400. The Quarterly Cumulative Index Medicus was operating at a small loss. The Association had been successful in all its law suits. The board announced the decision to develop a new building by adding to its quarters.

At this time the Judicial Council proposed amendments which would more definitely define membership and fellowship in the American Medical Association and which would clarify its wording.

COUNCIL ON HEALTH AND PUBLIC INSTRUCTION

Since the Council on Health and Public Instruction had been relatively inactive during the war because its secretary and most of its members had been in the military service, the chairman found it desirable at this time to present a brief history of the work of the Council since its origin. Since that council was discontinued some years later, when its activities were turned over to a number of bureaus, it is well to read that summary:

> The Council on Health and Public Instruction was organized at St. Louis in 1910. During the reorganization period of the Association from 1902 to 1910 many independent committees had been created dealing with closely related subjects but without any coordination or definite division of functions or jurisdiction. At the 1909 session the Section on Hygiene and Sanitary Science asked the House of Delegates to create a permanent council on these subjects. The reference committee to which this request was referred called attention to the close relation existing between public education, medical and public health legislation and the development of hygiene and sanitation and recommended the appointment of a committee to consider the advisability of combining the functions of legislation, public instruction, organization and public sanitation in a permanent council. This committee was appointed and reported the following year, recommending the establishment of such a permanent council. The Council on Health and Public Instruction was accordingly created and appointed in June 1910 and held its first meeting and organized in July of the same year. In it were merged the old Committees on Medical Legislation, Public Instruction on Medical Subjects, Defense of Medical Research, Organization, Uniform Regulation of Membership, Visual Standards of Pilots, Public Health Education, Prevention of Blindness and Postgraduate Study. In 1911 the work of the Council consisted in the promotion of the work of Dr. J. N. McCormack, at that time engaged in organization work for the Association; in the development of a series of fifteen pamphlets on the Defense of Medical Research, which, in addition to thirteen already published, formed a standard series of twenty-eight monographs on this subject, and in the development of a bureau on medical legislation by which it was hoped some of the problems in this field could be solved and in studying the problem of public education by state boards and other agencies through popular pamphlets.
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> At the next session, in 1912, the Council reported that a Press Bureau had been organized and conducted during the past year by which regular press bulletins had been sent to approximately 5,000 daily newspapers each week; the Speakers' Bureau had been organized and in the three months of its existence had supplied speakers for forty-four meetings; nine pamphlets on various public health subjects had been prepared, printed and distributed; a Handbook for Speakers on Public Health had been compiled, printed and distributed to the speakers of the Bureau. The Council also reported the organization, through cooperation with the National Electric Light Association and the American Institute of Electrical Engineers, of the Committee on Resuscitation after Electrical Shock; of the appointment, in cooperation with the National Education Association, of a Joint Committee on Medical Expert Testimony, consisting of representatives of the American Medical Associa-

tion, the American Bar Association and the Commissioners on Uniform Laws; of a Committee on Rural Sanitation consisting of representatives of the American Medical Association, the Association of Railway Surgeons and the Conference of State and Provincial Boards of Health; of a Committee on Vital Statistics Legislation consisting of representatives of the American Medical Association, the American Public Health Association, the American Bar Association, Commissioners on Uniform Laws and the Bureau of the Census. In addition the Council had done much work along legislative lines and had represented the Association in a campaign for the establishment of a national department of health.

In 1913 the Council reported the continuation of these activities, showing that speakers had been furnished for 213 meetings during the year; that fourteen pamphlets had been prepared and distributed, and that the various subcommittees of the Council had been functioning successfully during the year. A Committee on Resuscitation from Mine Gases, as the successor of the Committee on Resuscitation after Electrical Shock, had been created at the request of the Federal Bureau of Mines. These committees had standardized the methods of artificial respiration and the treatment of the drowned and those suffering from gas, electric shock, and so on..

In 1914, after four years of existence, the Council presented to the House of Delegates a definite program in which it endeavored to formulate the duties and activities of the organized medical profession in the public health field. In outlining such a program the Council assumed that the primary object of its existence was to place before the profession and the public of the United States the objects, purposes and work of the organized medical profession as represented by the American Medical Association and its constituent state and component county societies, so as to secure public support and endorsement of our efforts for the improvement of public health conditions in the United States. Three general lines of action were accordingly recommended. These were:

1. A thorough investigation of present public health conditions in the United States with the view to securing more accurate information on all phases of the public health problem than is now available.

2. Education of the public by every possible means in order that the people may understand the enormous advances in scientific medical knowledge during the last generation and the possibilities of utilizing such knowledge in the prevention of disease, the reduction of the death rate and the prolongation of human life.

3. The crystallizing of such educated sentiment in necessary public health laws which will render possible the conservation of human life commensurate with our advancing knowledge and will render such laws effective through the only force available in this country, namely educated and enlightened public opinion.

Under the first head, namely the investigation of the present public health situation, need for additional knowledge was subdivided into four classes: (*a*) public health activities of the federal government, (*b*) state public health activities, (*c*) municipal health organization and (*d*) voluntary public health organization.

Under the second head, the education of the public, the Council reported the continuation of the Press Bureau, forty-two bulletins having been sent to 4,900 newspapers at a total cost of approximately $2,300. The Speakers' Bureau had been maintained during the year, speakers had been furnished for 133 meetings at a total cost of approximately $1,900, and a standard set of public health pamphlets had been prepared and published for the use of state boards. In addition, a series of twenty pamphlets on Conservation of Vision had been prepared and issued by the subcommittee on this subject. This set of pamphlets has remained in use ever since and has been recognized as a standard in this field. A series of six pamphlets on cancer and its prevention had also been prepared and published. The total number of pamphlets issued during the year was 57,250.

In 1915 the Council reported the continuation of its program, particularly the carrying on of a comparative study of state public health activities by Dr. Charles V. Chapin, health commissioner of Providence, R. I., as the special representative of the Council. Dr. Chapin's report was the first effort to collect data on state health activities with a view to the ultimate standardization and classification of state public health work. Regarding voluntary public health activities, the Council endeavored through a conference of representatives of the various voluntary organizations held in New York on March 13, 1915 to coordinate the numerous organizations in this field. Along educational lines, the Council reported that, at the direction of the general manager, the mailing list of the Press Bulletin had been reduced to 2,200. Owing to the limited appropriation, the amount available for the Speakers' Bureau had been limited to $1,000. For this amount speakers had been furnished for 151 meetings, an average expense of $9.80 a meeting. During the year 285,400 pamphlets have been printed and distributed.

In 1916 the Council reported further development of its program, including the publication of Dr. Chapin's Report on State Public Health Work, with a rating sheet of the forty-eight state health organizations showing their comparative standing in different lines of state public health work, their appropriations, expenditures, etc. A preliminary edition of 1,000 copies of this report was distributed to members of state boards of health and officers of the Association for criticism and suggestions, and the Council expressed the hope that at the end of two or three years a second survey might be made for confirmatory and comparative purposes. Owing to reduced appropriations the Press Bulletin had been suspended, and the plan of the Speakers' Bureau had been modified by asking local organizations to pay the expenses of speakers instead of having these expenses borne by the Association. During the year 1,133,500 pamphlets had been printed and distributed. Cooperative work had been carried on through the Elizabeth McCormick Memorial Fund and the dry-goods stores of the country for child welfare.

Viewing the situation after the war, the Council thought it inadvisable to continue its press bureau and its speakers' bureau since those functions had been developed by other agencies. It proposed to continue the publication of useful pamphlets. It felt that the control of voluntary health organizations was a problem not for the Council but more particularly for the American Public Health Association, which had recently organized a council of representatives of fifty-seven different national public health organizations. It proposed, therefore, to limit its work largely to the routine work of the secretary's office, continuation of the section on legal medicine and medical legislation, and a survey of public health activities of national, state and municipal, governmental and voluntary agencies. The final section of the report, which was issued under Dr. Victor C. Vaughan as chairman, with Dr. Frederick R. Green as secretary, dealt with social insurance. This report reviewed the existing status of legislation in the field and expressed the point of view of the medical profession in positive terms:

> The attitude of the majority of physicians up to date has been one of unqualified and often unreasoning opposition, without any effort to study the question or to consider the arguments put forward in favor of the proposed plan. Unreasoning opposition or sweeping and often erroneous general arguments against the measure will not prevent its adoption nor will it enhance the influence of physicians. It is of the utmost importance to the medical profession at present that we give this question the most careful, painstaking, patient and disinterested study, that we qualify ourselves as authorities instead of allowing this function to be exercised by the active proponents of social

> insurance. To this end it is particularly necessary that we study this question dispassionately and critically, discriminating between fundamental principles and nonessential details.

The Council recognized four possible solutions for the problem of illness among persons of low income: (1) increasing the income, (2) reducing the amount of sickness, (3) distributing the costs of sickness among the individual, the industry and the state, and (4) doing nothing. These were classed as the economic remedy, the state public health remedy, social insurance and no remedy at all.

It was recognized that extensive studies would be required from an economic point of view to answer many of the questions in the field concerned. The Council recommended that the House of Delegates give most careful study to the report of its subcommittee on social insurance.

The report of the subcommittee on social insurance leaned largely on statistics that were being developed by insurance companies and by the U. S. Public Health Service. It endeavored to assess the responsibility for sickness in its various proportions to the individual, the community and industry. It discussed the relationships between sickness and economic distress, quoting again largely from such writers as the Webbs, Edward T. Devine, Michael Davis and little at all from writers opposed to state controlled methods of medical care.

The final section of the report was an analysis of the relationship of the medical profession to the problems of social insurance.

The committee seemed to believe that a choice was necessarily between state medicine and health insurance. It recognized the evils prevailing in the plans of other countries and recommended that our medical profession learn from the difficulties that prevailed in England and Germany. It felt that the decision would rest not with the medical profession but with economic groups and forces outside the medical profession. Thus it said:

> Your committee does not deem that it is its duty to bring forward at this time a method thoroughly worked out in all detail of medical practice under any sickness insurance scheme. In its previous reports it has gone fully into the methods of payment of physicians under such acts. It has pointed out the mistakes made in the administration of medical service by the insurance laws abroad. It must further be emphasized that it is not a question for the decision of the medical profession whether or not these laws shall be put in force. That is a question for economic groups and forces outside of the medical profession. It will be decided when labor and industry agree together sufficiently to demand it of the legislative bodies of the various states. It is, however, of the utmost importance for the medical profession to be ready with constructive suggestions, to meet labor and industry halfway and show to them how the profession may give a greatly improved service to the wage earners and receive a just remuneration in return, and the great mass of unremunerative medical charity may cease to exist. It is also for the profession to decide whether or not it wishes to carry on its existence under some form of sickness insurance or under some method of state medicine. That choice must inevitably be made.

The conclusion was, however, simply a recommendation for further study and for appearance by physicians before all state legislatures having these questions before them so that the point of view of medicine could be adequately presented. This report was signed by four names: Drs. Alexander Lambert, M. L. Harris, F. L. Van Sickle and S. S. Goldwater.

MULTIPLE RESOLUTIONS

By this time it was apparent that so many actions were being taken in the organization and development of the Association that some codification was needed. A resolution was introduced requesting the secretary of the Association to collect all resolutions passed in the previous five years, to index them properly and to add new resolutions as they developed. The resolution was passed with simply an amendment that ten years be codified instead of five.

SOCIAL INSURANCE

The report on social insurance was referred to a reference committee which included Dr. Thomas S. Cullen, Maryland, as chairman, and Drs. Clarence Pierson, Louisiana, and Charles E. Humiston, Illinois. The committee recommended that every member of the House read the report in full. It recognized the stupendous character of the problem. It commended the committee on refraining from making any definite recommendations. Especially, however, it recognized the political character of the situation. It concluded its report by recommending a change in the By-Laws which would make the Reference Committee on Legislation and Political Action instead a Reference Committee on Legislation and Public Relations. The committee said:

> This change is deemed advisable at this time, as the term political action has in some quarters been thought to refer to politics. In the words of Confucius, "Avoid the very appearance of evil. Do not stoop to tie your shoes in your neighbor's melon patch."

SPECIALIZATION

At this session of the Association there suddenly arose a definite recognition of the rise of specialization versus general practice; a resolution was introduced that the House of Delegates encourage the designation of the practice of general medicine or family physician as a distinct and dignified specialty and that the Council on Medical Education consider the possibility of establishing a definite curriculum leading to the degree of practice of this specialty which would materially shorten the course. The House of Delegates referred these to the Council on Medical Education.

THE SPEAKER

When the elections came before the House of Delegates on the concluding day of the session, an unusual situation arose in the proposal of nomination of the speaker for the presidency. A number of the parliamentarians had studied the Constitution and By-Laws and voiced their opinions to the effect that the speaker was not a member of the House of Delegates and that he was therefore eligible. A motion was taken to the effect that the speaker be considered eligible and the motion passed. Then Admiral William C. Braisted of the U. S. Navy was nominated for the presidency and Dr. Hubert Work announced that he was not even a tentative candidate. Admiral Braisted was elected unanimously to the presidency of the Association.

A number of foreign guests had come to the meeting which had been declared a Victory Meeting for the Association. These included six from Belgium, eight from England, three from France, two from China, three from Japan, four from Cuba, one from Norway and one from Sweden. All were elected to Honorary Fellowship in the American Medical Association.

DAYLIGHT SAVING TIME

As the session ended, the Congress of the United States was proposing to repeal the Daylight Saving Act. The House of Delegates officially opposed the repeal of the act and expressed its opinion of daylight saving as follows:

> The national experience with the Daylight Saving Act during the past two years has shown in the opinion of the committee that the action of this bill has been wholly beneficial, not only has it added to the total of national health by lengthened hours of recreation in the open air, but it is the belief of the committee that notable economic savings have been made in the use of fuel, thereby materially assisting the conservation of national resources, which still is and always will be essential.

BOARD NEEDS MORE MEETINGS

By this time the multiple affairs of the Association had become so great that the Board of Trustees found it impossible to handle them in the amount of time allotted to its meetings. The Board had been accustomed to meet but twice each year—once in February and once at the time of the annual session. Most of the members of the Board were certain that there ought to be more frequent meetings, primarily because too much opposition was focusing itself on the editor and general manager and that it was unfair to put all the responsibility on the manager. It was felt that the Board of Trustees should meet quarterly and that there ought to be an executive committee which would meet regularly in order to take some of the burden from the editor and the general manager. When Dr. George S. Simmons was asked for his opinion, he pointed out that it was at his earnest suggestion that more frequent meetings of the Board were being held. He said that a Board of Trustees consisting of nine men in session once every three months would not do much toward relieving the general manager, or rather the editor, of responsibility; that it is not the general manager, but the editor, that is criticized. He stated that we have a journal second to none in the world, a journal that is a power in the field of medicine, and yet if the editor turns down a paper written by some influential man it has its effect; that what the manager—the editor—wants is some one to shoulder a little of the responsibility—of the blame. He mentioned that there is not as much criticism today as there was fifteen years ago but that there is bound to be some—that it may die down for a time but that it will spring up again. He urged the appointment of a committee of three, living within a reasonable distance of Chicago, to meet once a month—not once in three months—which should act on matters of importance that are coming up all the time and assume part of the editor's responsibility. He stated that it is the editor's position that should be supported.

As a result of these actions the board decided on a technic which would involve four meetings of the full board annually and the meetings of the executive committee once each month—a procedure which has been followed since that time.

DERMATOLOGY JOURNAL

Petitions now had come for a journal in the field of dermatology. For some time the *Journal of Cutaneous Diseases* had been printed in the headquarters office of the American Medical Association and it was felt that publication by the Association would solve many of its financial and editorial problems.

EXECUTIVE COMMITTEE

The first Executive Committee of the Board of Trustees included Drs. Frank Billings (chairman), W. T. Sarles and A. R. Mitchell.

Following the annual session in June of 1919 the Executive Committee met and assumed as its first responsibility advice to the editor relative to passing on papers which had been marked for publication in the Transactions only. THE JOURNAL had begun publishing abstracts from German medical periodicals and Dr. George W. Crile, in association with Drs. F. E. Bunts and W. E. Lower in Cleveland, were opposed to giving any recognition to Germans or German literature. There had been an extensive correspondence on the subject. Dr. Crile was adamant in refusing to countenance any relationships whatever with Germans or any recognition of their science. The Executive Committee of the Board of Trustees agreed with the editor that anything of real importance appearing in the *German journals should be brought to the attention of* the medical profession.

NEW EDITORIAL BOARDS

The Board of Trustees during this year established editorial boards for the ARCHIVES OF DERMATOLOGY AND SYPHILOLOGY and for the ARCHIVES OF SURGERY.

THE STERNBERG BIOGRAPHY

There was also the problem of printing the biography of General Sternberg, which had been written by Mrs. Sternberg, the costs to be offset by Mrs. Sternberg, and it was agreed to undertake this publication with the understanding that if there were any profits they would be divided equally with Mrs. Sternberg.

WAR BOOKS

At that time the American Medical Association endeavored to get distribution to the medical profession of books which had been printed during the war for the use of medical officers.

It was pointed out by Dr. Frank Billings that he had learned that there were no books on hand but that even if there were any they would be government property and could not be distributed. However, as the nation entered World War II some 8,000 copies of the anatomy prepared during World War I were found in a warehouse on Long Island.

The Ad Interim Committee which had been created during the war to consider emergencies arising during the war presented to the Board of Trustees of the Association an extensive letter from the President of the Association, Dr. Alexander Lambert, which he had received from Gen. Merritt W. Ireland concerning the possibility of deriving some lessons from the experience in the war. It was proposed that a circular letter be sent to all men who had been actually in service and some means be provided for continuing the instruction of men in the medical reserve. At that time Dr. Billings explained some of the problems confronting the medical department of the Army, including representation of the medical department on the general staff, control by the medical department of its own personnel, control by the medical department of supplies, building of hospitals and camps, recognition of the importance of sanitation and preventive medicine in the Army, military medical teaching and suitable recognition of qualifications of officers.

As the year went on there came a request from a group of obstetricians to take over the *American Journal of Obstetrics and Diseases of Women and Children*, but it was decided that the Association already had enough periodicals in hand.

(To be continued)

Clinical Notes, Suggestions and New Instruments

REACTIONS TO PENICILLIN

Procaine Hydrochloride Intravenously in the Treatment of Reactions Similar to Serum Sickness

SIDNEY DRESSLER, M.D.
and
RALPH E. DWORK, M.D.
Denver

Numerous reports have appeared in the literature of reactions similar to serum sickness and of other reactions to penicillin. These reactions have been variously treated with epinephrine, Benadryl hydrochloride (beta-dimethylaminoethyl benzohydryl ether hydrochloride), calcium gluconate, ephedrine and other preparations. Recently, State and Wangensteen[1] reported the use of procaine hydrochloride intravenously for actual serum sickness, and a similar case was cited by Appelbaum and others.[2] Prompted by these reports we are adding a case of successful treatment with procaine hydrochloride for a reaction similar to serum sickness resulting from penicillin therapy.

REPORT OF A CASE

E. B., a white woman aged 42, was admitted on June 17, 1946 with a history of pulmonary tuberculosis for the past ten years. She had previously been treated with artificial pneumothorax, which adequately controlled the disease. Reactivation of the tuberculous process caused her to seek readmission. Roentgenologic examination revealed a cavity in the upper lobe of the left lung, for which collapse therapy was advised. Reinstitution of pneumothorax having failed, a classic extrapleural paravertebral thoracoplasty was performed on the left side on Aug. 13, 1946. The patient was given 20,000 units of penicillin every three hours, intramuscularly, for three days prior to the operation, and the dosage was continued for seven days postoperatively. In the course of the surgical operation, 3 Gm. of sulfathiazole crystals was sprinkled into the wound. In the immediate postoperative period the patient received meperidine hydrochloride (Demerol) and morphine for pain, with occasional doses of barbiturate preparations for sleep and nervousness. On the second postoperative day some intestinal stasis with distention was noted. This was successfully combated by use of a rectal tube and by the injection of 1 cc. of neostigmine methylsulfate. Otherwise, the convalescence was uneventful.

On Sept. 9, 1946 a second stage three rib thoracoplasty was performed. Again 3 Gm. of sulfathiazole crystals was sprinkled into the wound. Penicillin therapy had been started three days before surgical intervention in the same dosage as previously, with no untoward changes noted. During the night after the operation the patient's temperature rose to 99.4 F., and giant urticarial wheals appeared on the face, arms and legs. Her medication up to this time had consisted of penicillin and meperidine. On Sept. 10 Benadryl was given twice in divided doses of 50 mg. each for the urticaria. This was followed by prompt relief of the itching and subsidence of the urticaria during the day. Penicillin therapy was maintained.

On the morning of Sept. 11 the patient complained of a sore throat, and the temperature rose to 100 F. Detailed inspection of the throat revealed no abnormality. By 1 p. m. the temperature had risen to 102 F., and a finely patterned macular rash appeared on the abdomen, on the buttocks and on both forearms and thighs. This rash faded on pressure. There was generalized pruritus. Benadryl, 100 mg., was administered with complete relief of the itching and with fading of the rash on the abdomen. The patient's temperature continued to rise, however, to 103 F. Examination of the blood at this time revealed 18,000 white blood cells, 92 per cent of which were polymorphonuclear leukocytes with a decided shift to the left. Administration of penicillin was discontinued.

By the morning of Sept. 12 her temperature was 103.4 F.; she had a sore throat and tenderness over both temporomandibular joints. The patient could not open her mouth and remarked on the generalized muscular and articular pain and tenderness. The rash previously described appeared again over the chest and abdomen, and in addition the arms and thighs showed small splinter hemorrhagic spots, which faded on pressure. There was no nuchal rigidity or Kernig or Brudzinski signs. Inspection of the wound revealed normal conditions. The mouth was opened forcibly, and the throat was inspected but was completely negative. The administration of Benadryl, 100 mg., again gave relief of itching and some fading of the rash on chest and abdomen but not of that on the forearms and thighs. The arthralgia and the soreness of the muscles were unrelieved. Calcium gluconate and epinephrine were given without effect.

At 1:30 p. m. an infusion of 1 Gm. of procaine hydrochloride in 500 cc. of isotonic solution of sodium chloride (0.2 per cent) was begun by the slow drip method. Within ten minutes after the start of the infusion there was great relief of the arthralgia and trismus, and the rash began to fade.

By 8 p. m. the rash had disappeared completely. The mouth could now be voluntarily opened sufficiently for inspection. The pain of the throat was no longer present. The temperature had dropped to 102.4 F. There was a moderate amount of abdominal distention present, which was relieved by use of the rectal tube and by the administration of 1 cc. of neostigmine methylsulfate. By morning neither arthralgia nor rash was present. The temperature had fallen to 101 F. The abdomen was considerably deflated. Within the next twenty-four hours the temperature returned to normal and the patient was symptom free; convalescence thereafter was uneventful.

Nine days after the second stage of the surgical intervention, cutaneous patch tests with penicillin were negative. Conjunctival instillations or subcutaneous skin tests were considered too dangerous to attempt.

COMMENT

During the latter part of the war, in spite of the extensive use of penicillin, there were only rare reports of any reactions to penicillin, but more recently reports have appeared of such reactions.[3]

Penicillin is used routinely in preoperative and postoperative therapy for patients requiring thoracoplasty. A number of urticarial reactions have appeared, but this is our first case of a reaction similar to serum sickness. Prompted by the striking results reported by others on the use of procaine hydrochloride to relieve the arthralgia, we used it in the case here described with gratifying results. As others have pointed out, the mode of action of this drug is highly conjectural.

The use of skin tests on our patient gave a negative result. Others have reported similar observations. Apparently, fairly large doses of penicillin, as high as 1,500 units, are required to give reliable results.

We are encouraged by the results obtained in this case to add it to the growing number of similar reactions which have been successfully treated and to call it to the attention of others.

From the National Jewish Hospital, Dr. Allan Hurst, Medical Director, and the University of Colorado School of Medicine.

[1] State, D., and Wangensteen, O. H.: Procaine Intravenously in Treatment of Delayed Serum Sickness, J. A. M. A. **130:** 990 (April 13) 1946.

[2] Appelbaum, E.; Abraham, A., and Sinton, W.: Serum Sickness Treated with Procaine Intravenously, J. A. M. A. **131:** 1274 (Aug. 17) 1946.

[3] Cormia, F. E.; Jacobsen, L. Y., and Smith, E. L.: Reactions to Penicillin, Bull. U. S. Army M. Dept. **4:** 694 (Dec.) 1945. Strakosch, E. A.: Serum-Sickness-like Reactions to Penicillin, Rocky Mountain M. J. **43:** 558 (July) 1946. Kolodny, M. H., and Denhoff, E.: Reactions in Penicillin Therapy, J. A. M. A. **130:** 1058 (April 20) 1946. Strazza, J. A.: Delayed Sensitization to Penicillin Similar to Serum Sickness, ibid. **130:** 1071 (April 20) 1946.

Council on Pharmacy and Chemistry

REPORT OF THE COUNCIL

The Council has authorized publication of the following report.
AUSTIN SMITH, M.D., *Secretary.*

ANNUAL MEETING OF THE COUNCIL ON PHARMACY AND CHEMISTRY

The Council convened at 9:45 a. m., Nov. 1, 1946, for a meeting with the representatives of the American Pharmaceutical Manufacturers' Association and the American Drug Manufacturers' Association to discuss the new rules adopted by the Council. All members were present with the exception of Dr. David Barr.

The conference was characterized by a spirit of good will and cooperation sparked by a frank statement of the manufacturers' representatives on points of difficulty in application of the rules and other problems related to the Council. Full agreement was reached on all essential points, and the resulting modifications will be published in the near future.

The Council reconvened at 2:10 p. m. on Friday. All Council members present at the morning session were at this session. In addition there were present as guests for part or all of the meeting Dr. Charles E. Reed and Dr. Arno Viehoever of the Technical Industrial Intelligence Division of the Department of Commerce, Dr. E. E. Irons of the Board of Trustees, Dr. Donald Wallace of the Council on Dental Therapeutics of the American Dental Association, Dr. Ralph M. Waters and Dr. Windsor Cutting of the Therapeutic Trials Committee, Dr. E. Fullerton Cook of the Pharmacopeial Revision Committee, Dr. Milton Veldee of the National Institute of Health, and Dr. R. P. Fischelis of the American Pharmaceutical Association.

The first order of business was adoption of a motion that the Secretary of the Council be authorized to prepare a redrafting of the rules incorporating the changes agreed on at the morning meeting with the manufacturers' representatives. The Council then proceeded to the consideration of the prepared agendum.

Warnings on Labels of Prescribed Drugs.—The Council considered the fact that under the Food, Drug and Cosmetic Act pharmacists may be required to write or insert on the label of a prescribed article a warning concerning its danger even though the physician has not written such a warning on the prescription. After extensive discussion the Council voted to ask the Board of Trustees to make every effort through available channels to increase the sense of responsibility of physicians in the prescription and administration of drugs known to have inherent dangers for their patients. (The Board of Trustees has since requested a conference to be called by the Council with representatives from several agencies to determine how this sense of responsibility may be best developed.)

Human Plasma and Plasma.—After a considerable discussion of the postwar status of blood and blood derivatives, the consensus was that a definitive report is needed for the information of the medical profession and interested organizations. It was agreed that such a report be prepared under the Council's sponsorship for publication in THE JOURNAL. (Such a report is now under way.)

Products That May Be Advertised to the Public.—Under the Council's rules certain categories of products may be accepted for advertising to the public after special consideration of the specific preparation involved. The Council considered the feasibility of adding to this list and voted that such a list of additional categories be drawn up for Council consideration by an appropriate consultant or committee of consultants as to the desirability of releasing such classes of articles for lay advertising.

Report of the Therapeutic Trials Committee.—The Secretary of the Committee, Dr. Walton Van Winkle, reported that the Committee is now organized and has started work by way of obtaining information with regard to available clinical investigators and facilities. He discussed informally some projects which the Committee has tentatively considered. It was reported that Dr. Chester Keefer was elected and had consented to act as chairman and Dr. Stuart Mudd as vice chairman of the Committee.

Atomic Fission Products.—The Council considered the question of the need at the present moment for some body of semiofficial character, preferably, to be advisory to suitable governmental and commercial agencies on the distribution of radioactive isotopes and similar materials, both for experimental study and for actual use. After considerable discussion the Council voted that the Secretary be authorized to look into the circumstances surrounding this question and report on the possibility for the Council's advisory participation in this work.

Special Representation on the Council and the Therapeutic Trials Committee.—The Council considered a proposal that a representative or representatives of a specialized group of physicians be included in the membership of the Council. In the discussion of this question it was pointed out that the Council is a judicial rather than a representative body. In other words, it passes judgment on evidence offered for medicinal preparations proposed by manufacturers for inclusion in New and Nonofficial Remedies. In arriving at such judgment there has always been available to the Council the assistance of specialists in medical or other fields and the Council has always taken advantage of this fact. It was therefore the consensus that there is no necessity for having representatives of any particular group specialists as members of the Council.

Demerol Hydrochloride.—The Council considered the question of the addictive properties of this drug. It was pointed out that, in accepting the drug, the Council required the manufacturer to mention the possibility of addiction. The Council voted to study the problem further and to issue a report when further evidence becomes available.

Accepted Dosage Forms.—The attention of the Council was called to a letter received from a physician who pointed out that occasionally in prescribing a new drug, incorporating it as part of a prescription, he found it impossible for the pharmacist to fill it with the use of the drug in its bulk or powdered form, the agent being available only in tablets or perhaps capsules. The physician proposed that the Council amend its rules to require manufacturers to market the bulk form of an accepted drug as one of the dosage forms. It was pointed out that the Council does require, in the case of nonofficial mixtures, that the basic substance be presented and considered by the Council before acceptance of specific dosage forms. However, not every manufacturer makes the bulk drug available as a dosage form, and the Council felt that it was not feasible to make the requested arbitrary requirement concerning the actual marketed forms of accepted drugs, although it believed that manufacturers might be made aware of the dispensing problem where indicated.

Significance of the Council's Seal of Acceptance.—It has always been held that the use of the Council seal signified only that the product conforms to the rules set forth by the Council or that no conflict has been found with the rules. Consideration was given to the possibility that the use of the seal might be interpreted to have other significance. Further study of the question was authorized.

Medical Patents.—The Council's office as well as the other divisions of American Medical Association headquarters receives from time to time inquiries as to what the Association is doing concerning patents. The Council gave further consideration to the question in line with the Association's statement on medical ethics and with the report of the conference on medical patents of the Board of Trustees held March 16, 1939. No further report was authorized, but it was agreed that the Council should continue to give study to the question of medical patents.

Distribution of New and Nonofficial Remedies Copies to the American University of Beirut.—For many years the Council has supplied one class of each approved medical school paper bound copies of the current edition of New and Nonofficial Remedies. A petition was received from the University of Beirut, which is manned mainly by American teachers and by charter is a part of New York State University, to be included in this list. The Council was pleased to comply with the request and voted to send ninety copies of New and Nonofficial Remedies (one for each junior and one for each senior medical student) and provided for sending forty-five copies annually hereafter.

The National Institute of Health.—Dr. Veldee, chief of the division of biologic control of the institute, who was present as a guest, explained to the Council how the National Institute of Health operates in its duties of controlling the safety, purity and potency of preparations that are made from viruses, antitoxins, antiserums and analogous products. It was remarked that such information would be of interest to all physicians, especially an explanation of the meaning of the statement that a product has been "approved" by the National Institute of Health. Broadening the discussion to include other governmental activities related to pharmaceuticals and pharmaceutic preparations, the Council voted that committee draw up a report for publication concerning the exact significance of the Pharmacopeia, the National Formulary, the National Institute of Health, the Food and Drug Administration and other related organizations or publications and that appropriate statements be included in Council publications.

U. S. Department of Commerce: Technical Industrial Intelligence Committee.—Drs. Reed and Viehoever of the department gave an interesting discussion of their work in the investigation of scientific (medical, chemical and pharmaceutic) information obtained from enemy countries. Drs. Reed and Viehoever asked that the Council cooperate in evaluating the reports on medicinal preparations prepared as a result of investigations of the Technical Industrial Intelligence Division. The Council voted heartily to cooperate in this matter.

Therapeutic Research Committee.—The chairman of the Committee reported that almost twice as much had been distributed to investigators in 1946 as had been awarded in 1945. He felt that the reasons for the difference are, first, that most clinical investigators were thoroughly preoccupied during the war with war contracts and other things and could not do very much of the type of work that this committee assists in; second, that the Committee has adopted a rather more liberal policy effective this year, looking to somewhat more continuous and somewhat larger support for the worth while projects.

High Potency Vitamin D Preparations.—The Council has been continuously interested in the therapeutic use of vitamin D and especially in the possible danger from the use of massive dosage. It has published a report rejecting two preparations promoted for the massive use of vitamin D in arthritis. Attention was called to current practice of using vitamin D dosage of the order of 300,000 and 500,000 units in the treatment of psoriasis and to the rapidly growing practice of the use of massive vitamin D dosages in the prevention of rickets. As a result of the discussion the Council voted to authorize preparation of a report dealing with the misuse of vitamin D in large doses and the hazardous effect of such practice.

NEW AND NONOFFICIAL REMEDIES

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.

Austin Smith, M.D., *Secretary.*

TABLETS BUFFERED PENICILLIN.—Tablets containing sodium or calcium penicillin and one or more buffering substances such as sodium citrate, aluminum dihydroxy amino acetate or aluminum hydroxide.

Actions and Uses.—Tablets buffered penicillin are intended for oral medication of the conditions for which penicillin has been found useful. Because of irregularities in absorption and because of destruction of much of the administered penicillin in the digestive tract, oral administration of penicillin should be preceded by administration of penicillin by the parenteral route. Tablets of penicillin should be used only after the infection is under control. Since gonorrhea responds rapidly to penicillin therapy, oral medication alone may be used in the absence of complications.

In order to achieve comparable blood concentrations of penicillin, from three to five times as much must be given orally as by the parenteral route. Gastric intolerance to the buffering agent may be encountered in some patients, necessitating abandonment of oral medication and a return to parenteral penicillin therapy.

Dosage.—Tablets buffered penicillin should be administered on a fasting stomach, not less than thirty minutes before or not less than one and one-half hours after eating.

Gonorrhea.—Combined Therapy: A single injection of 100,000 units followed not later than two or three hours by oral doses of 50,000 units each every two or three hours for six doses per day for one or two days.

Oral Therapy: Fifty thousand units every two or three hours for six doses per day for one or two days.

In complications such as arthritis, endocarditis and epididymitis, administer penicillin parenterally. Concurrent infections of gonorrhea and syphilis should always be considered. Treatment of gonorrhea under the foregoing dosage schedule may prevent the appearance of the chancre and thus mask the first evidence of syphilis. The masking of the chancre should not be construed as a beneficial effect. Blood serologic tests should be made once a month for a minimum of three months.

Pneumococcic, Streptococcic and Staphylococcic Infections.—A minimum of 20,000 to 40,000 units of penicillin parenterally every three hours. After the acute phase and when the temperature has been reduced, treatment may be continued with oral administration. Treat with a dosage of 40,000 to 50,000 units each two or three hours (day and night) for at least forty-eight hours after the temperature has returned to normal. If the condition is not controlled by oral penicillin, return to parenteral administration.

Prophylaxis.—Against secondary infections after tonsillectomy or tooth extraction in cases with a history of rheumatic fever or rheumatic heart disease, congenital heart disease and other conditions in which secondary infections may occur (infected teeth or tonsils), administer 100,000 to 200,000 units daily in divided doses from one day before to three or four days after surgery.

Precautions.—In meningitis, endocarditis and peritonitis, administer penicillin *only* parenterally. In acute infection with bacteremia or septicemia, parenteral administration of penicillin should be continued until the blood cultures become negative and the acute condition is controlled.

Abbott Laboratories, North Chicago, Ill.

Tablets Penicillin Calcium: 50,000 units with sodium citrate 0.5 Gm. as a buffer.

Bristol Laboratories, Inc., Syracuse, N. Y.

Tablets Penicillin Calcium: 50,000 units with calcium carbonate 0.5 Gm. as a buffer.

Schenley Laboratories, Inc., New York

Tablets Penicillin Calcium: 50,000 units with calcium carbonate 0.45 Gm. as a buffer.

E. R. Squibb & Sons, New York

Tablets Penicillin Calcium: 50,000 units with trisodium citrate 0.5 Gm. as a buffer.

PENICILLIN TROCHES.—Troches containing sodium or calcium penicillin.

Actions and Uses.—Penicillin Troches are designed to dissolve slowly in the mouth, releasing sufficient penicillin to maintain an antibacterial concentration of penicillin in the saliva. This medication has been found effective in controlling acute Vincent's infection of the mouth and pharynx. Chronic infections require additional manipulative therapy. Systemic infections should be treated by parenteral or oral administration of penicillin.

Dosage.—Allow one troche to dissolve in mouth two or three times daily.

Abbott Laboratories, North Chicago, Ill.

Troches Penicillin Calcium: 1,000 units.

Schenley Laboratories, Inc., New York

Troches Penicillin Calcium: 1,000 units.

E. R. Squibb & Sons, New York

Chewing Troches Penicillin Calcium: 20,000 units.

The Upjohn Company, Kalamazoo, Mich.

Troches Penicillin Calcium: 500 units.

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SATURDAY, MARCH 22, 1947

DEATHS FOLLOWING THE USE OF "ANALBIS" SUPPOSITORIES

Recently the press and the radio have called attention to several deaths apparently due to Analbis Suppositories.

On Oct. 14, 1943 a new drug application was permitted to become effective for a suppository containing 135 mg. of the bismuth salt of diallylacetic acid dispersed in a cocoa butter base which was placed in commercial distribution by the Specific Pharmaceuticals, Inc., of New York City under the name Analbis Suppositories. Directions for use in children and adults were specific, and it was believed that the substance could be used under the conditions proposed and as directed. The preparation was recommended for pharyngitis, acute tonsillitis and gingivostomatitis. The successful use of bismuth preparations in the treatment of infections of the pharynx and adjacent structures had been reported by Lewis and by Silcox and Monteiro,[1] but injections were inconvenient and oral preparations of bismuth were either ineffective or produced undesirable gastrointestinal reactions. Rectal administration was shown to be effective and to have few undesirable effects.[2] None of the reports contained any indication that this preparation might produce untoward effects even when administered in animals or in human beings in amounts several times the recommended dose.

Deaths have been reported from several centers, including Texas, Norwalk, Conn., and New York City. At least 10 infants are reported to have died. Investigations by the Food and Drug Administration have revealed that none of the deaths can be attributed to bismuth poisoning, and it cannot be alleged at this time with certainty that the suppositories were responsible. However, in most instances investigated it was learned that from three to six times as many suppositories were used as were recommended by the manufacturer as the maximum dose. Diallylacetic acid may have been the cause of the deaths. At least the deaths are apparently due to an acute hepatitis and not to bismuth.

Whether the physician prescribed this overdosage or whether the parents of the patient undertook to exceed the physician's recommendation is not clear. Nevertheless, this tragedy again emphasizes the necessity for vigilance by physicians to prescribe properly, to be familiar with the properties and dosage of the drugs he uses, and to be cautious in prescribing new remedies about which only comparatively meager information is available.

Analbis Suppositories were voluntarily withdrawn from the market by the manufacturer after notification by the Food and Drug Administration of the deaths allegedly due to this preparation. The manufacturer submitted telegrams and letters to those who received shipments of the compound. Now the Food and Drug Administration with the cooperation of state and local authorities is attempting to secure the remaining suppositories. Physicians and pharmacists can cooperate by returning any unused suppositories to the manufacturer and warning patients for whom they have prescribed this medication to destroy or return the drug.

HUMAN TOXOPLASMOSIS

Toxoplasma has been known as a spontaneous infective agent for about ten years. In 1937 Wolf and Cowen[1] reported the presence of the infection in an infant born in New York who died at 4 weeks of age. Postmortem revealed widely disseminated inflammatory lesions of the brain and spinal cord. These were granulomas, areas of infiltration and necrosis, chiefly in the ventricular walls, and corresponding focal meningeal inflammation. Similar lesions were present in the retina and choroid of both eyes. An organism approximately 1.5 by 3 microns in size, usually ovoid and having a polar chromatin mass, was present in the lesions. The evidence indicated that the infection was congenital, probably a latent infection in the mother, which passed to the fetus by way of the placenta. The authors proposed that the disease be called granulomatous encephalomyelitis due to the organism Encephalitozoon hominis. Similar cases had been reported by Janku from Czechoslovakia, who observed inflammatory and degenerative changes in the eyes of a hydrocephalic infant and a parasite in the lesions, and by Torres of Rio de Janeiro, who reported a necropsy on a full term child that died at the age of 2 days; an intracellular

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[1] Lewis, J. F Vincent's Angina and Tonsillitis Bismuth Treatment, J. Arkansas M Soc. **38:** 39 (July) 1941. Silcox, L N, and Monteiro, Aristides. Modern Treatment of Acute Tonsillitis by Injections of Bismuth Compounds, Arch Otolaryng **34:** 719 (Oct) 1941. Lewis, J. F.: Fusospirochetal Organisms and Tonsillitis: Bismuth Therapy of Tonsillitis, Arch Otolaryng **35:** 587 (April) 1942

[2] Silber, Samuel. The Treatment of Tonsillitis, Pharyngitis and Gingivostomatitis with the Bismuth Salt of Heptadiene Carboxylic Acid in Cocoa Butter Suppositories, J. Pediat **23:** 59 (July) 1943 Stovin, J S: The Treatment of Acute Tonsillitis by Rectal Administration of a New Bismuth Compound Arch Otolaryng **39:** 259 (March) 1944. Silber, Samuel: Bismuth Suppositories (Analbis) in Throat Infections: Bacteriology and Pharmacology, Effectiveness Absorption, Excretion, Toxicity, J. Pediat **25:** 244 (Sept) 1944

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[1] Wolf, Abner, and Cowen, David Granulomatous Encephalomyelitis Due to an Encephalitozoon (Encephalitozoic Encephalomyelitis), Bull Neurol Inst. New York **6:** 306 (Aug) 1937.

protozoon parasite was found in the central nervous system. Richter in 1936 had reported a similar case. Wolf, Cowen and Paige[2] reported next the disease in a white male infant delivered at full term by cesarean section who became ill at 3 days of age and died at the age of 31 days. Necropsy revealed a widespread encephalomyelitis with multiple focal areas of inflammation and necrosis and disseminated miliary granulomas. The right eye contained a localized zone of chorioretinitis. A protozoon parasite was present in the leptomeningeal and parenchymal exudate in the granulomas and in the lesions of the choroid and retina. The clinical and pathologic observations in this case were similar to those in the first 4 cases described in the literature. The authors concluded that this group formed a distinct disease entity, which affects young infants, produces manifestations of generalized involvement of the nervous system and terminates fatally after an acute or subacute course. The spinal fluid shows xanthochromia, high protein content and pleocytosis. Miliary granulomas are a characteristic feature of the process in the nervous system. A protozoon parasite is present in all the lesions. The results of transmission of the infection to animals from the case reported here indicate that the causative protozoon is a Toxoplasma. The designation Toxoplasma hominis is suggested for the micro-organism and toxoplasmic encephalomyelitis for the disease.

Pinkerton and Weinman[3] described the first authentic occurrence of toxoplasmosis in an adult. Pinkerton and Henderson[4] reported 2 fatalities from an acute, febrile, exanthematic disease in adults in St. Louis. Intracellular Toxoplasma organisms were found in the tissues in both these cases in such numbers as to leave no doubt concerning their etiologic significance. The clinical picture of the disease had almost nothing in common with that of the previously reported instances in infants. The disease entity closely simulates Rocky Mountain spotted fever and endemic typhus and has many features in common with certain of the recently described atypical pneumonias. Pathologically also the picture differs widely from that of the infantile type, the predominant feature being a peculiar type of interstitial pneumonitis. Meningoencephalitis, though present, is not conspicuous. The pathologic features common to the infantile and the adult type are focal brain lesions, myocarditis and the presence of Toxoplasma in the lesions. The disease was transmitted readily to guinea pigs by inoculation of blood taken from one of the patients during life and to mice by the intracranial inoculation of necropsy material from the same patient. Circumstantial evidence suggested that the disease may be transmitted by ticks. Sabin[5] reported in 1941 clinically atypical encephalitis occurring in boys 6 and 8 years of age during October 1939 and found definite evidence of the etiologic relationship of the protozoon parasite Toxoplasma in one and suggestive evidence in the other. One died thirty days after onset and the other recovered completely on the tenth day. Intracerebral and intra-abdominal inoculation of fresh brain suspension produced toxoplasmic infection in 5 of 8 mice which came from a stock that was proved to be free of spontaneous infection.

Sabin and his co-workers[6] developed a method of demonstrating neutralizing antibodies against Toxoplasma in the serum. Sabin demonstrated such antibodies not only in the serum of patients with toxoplasmosis but in that of their mothers and sometimes in that of other members of the family as well. Wolf, Cowen and Paige[7] inoculated into rabbits and mice infected material from the brain and spinal cord of an infant suffering from granulomatous encephalomyelitis and produced an experimental disease which was readily transmissible in series. A parasite identical with that in the lesions of the patients was found in the lesions of the experimental animals. The morphology of this micro-organism, the course of the disease, the lesions produced in the mammals inoculated with it and the results of cross immunity experiments establish its identity as a Toxoplasma. Zuelzer[8] reported 3 instances of infantile toxoplasmosis. Two of the patients represent the first instance of toxoplasmosis occurring in identical twins. The demonstration of the disease in twins and the presence of neutralizing antibodies in the maternal serum and the chronic character of most of the lesions observed in the twin who died of the disease at the age of 1 month constitute evidence for the occurrence of antepartum infections with Toxoplasma.

Callahan and his associates[9] report a study of a case of infantile toxoplasmic encephalomyelitis. They reviewed 10,000 necropsies recorded in the Department of Pathology, Washington University School of Medicine, and were able to find 5 cases of Toxoplasma infections which had not been previously recognized as such. These cases were listed under such diagnoses as chronic meningitis, syphilitic meningitis and encephalomalacia with calcification. Micro-organisms morphologically similar to Toxoplasma have been demonstrated in tissue sections in characteristic lesions in the central nervous system. The authors have collected and reviewed all the previously reported cases of toxoplasmosis. With regard to the incidence of the toxoplasmic infection, the authors feel that the studies of Sabin and Callahan suggest that this type of infection is more widespread than is generally realized. The serums of 59 of the 151 persons studied by Sabin had neutralizing substances for Toxoplasma, and positive reactors were found in a number of groups studied. In the group of infants and children tested, the incidence of neutralizing antibodies was found to be high only when certain clinical signs were present. With 1 exception, the infants who exhibited either chorioretinitis in the macular region or cerebral calcification or both in association with other signs and symptoms possessed neutralizing antibodies in their serum. The serums of 8 of the 10 mothers of these infants tested also revealed neutralizing antibodies. The pathologic changes within the gray matter of the cerebral cortex vary from small foci of cellular infiltration to large zones of necrosis with extensive destruction of brain substance. One of the consistent observations in the infantile type of toxoplasmosis is the presence of large foci of calcification within the zones of necrosis. Periventricular infiltration with lymphocytes and plasma cells with ulceration of the ependymal lining is frequently observed in infantile toxoplasmosis. This readily accounts for the internal hydrocephalus observed in infants with this disease. In contrast to the widespread destruction of the brain and spinal cord observed in infantile toxoplasmosis, the disease in adults and older children produces pathologic changes which are more manifest in other viscera with minimal lesions in the central nervous system. Eighty per cent of infants with toxoplasmic infection have internal hydrocephalus which is present at birth or appears shortly after. Frequent chorioretinal atrophy is present.

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[2] Wolf, Abner; Cowen, David, and Paige, Beryl H.: Toxoplasmic Encephalomyelitis: III, Am. J. Path. **15**: 657 (Nov.) 1939.

[3] Pinkerton, Henry, and Weinman, David: Toxoplasma Infection in Man, Arch. Path. **30**: 374 (July) 1940.

[4] Pinkerton, Henry, and Henderson, R. G.: Adult Toxoplasmosis, J. A. M. A. **116**: 807 (March 1) 1941.

[5] Sabin, A. B.: Toxoplasmic Encephalitis in Children, J. A. M. A. **116**: 801 (March 1) 1941.

[6] Sabin, A. B.: Toxoplasma Neutralizing Antibody in Human Beings and Morbid Conditions Associated with It, Proc. Soc. Exper. Biol. & Med. **51**: 6 (Oct.) 1942.

[7] Wolf, Abner; Cowen, David, and Paige, Beryl H.: Toxoplasmic Encephalomyelitis: IV, J. Exper. Med. **71**: 187 (Feb.) 1940.

[8] Zuelzer, W. W.: Infantile Toxoplasmosis, Arch. Path. **38**: 1 (July) 1944.

[9] Callahan, W. P., Jr.: Russell, W. O., and Smith, Margaret G.: Human Toxoplasmosis, Medicine **25**: 343 (Dec.) 1946.

So far a specific therapeutic agent has not been found for toxoplasmic infection, although the administration of sulfapyridine may give beneficial results.

PHYSICAL EXAMINATIONS OF SELECTIVE SERVICE REGISTRANTS IN THE FINAL MONTHS OF THE WAR

The last years of the war were characterized chiefly by a growing need for men under 26 years of age to serve in the armed forces and an increasing scarcity of available manpower in this age group.[1] Hence it became necessary to restrict deferments in essential occupations, including agriculture, to reexamine many registrants who had formerly been rejected and to accept for military service some men who were unable to meet the physical requirements for general military service. As a result the rejection rates were higher during the final months of the war than during a period when the average age of examined men was less than 26 years.

During January 1944 through August 1945 the armed forces physically examined or reexamined some 5,767,000 registrants, of whom 2,536,800, or 44 per cent, were rejected for general military service. In addition, an estimated 1 to 2 per cent were rejected by local boards because of manifestly disqualifying defects.

Eighty-four per cent of the registrants physically examined during the last calendar year of hostilities were examined for the first time. These were chiefly men who registered with Selective Service at age 18 and men 19 to 25 years of age who had never been physically examined because they held deferments in essential occupations. A little less than 40 per cent (37.6) of this group were rejected on preliminary or preinduction examination.

The leading causes for all rejections during 1944—including local board rejections—were, in order of relative importance, mental disease, accounting for 26.8 per cent of all rejections; failure to meet the minimum intelligence standards, 12.8 per cent; musculoskeletal defects, 8.8 per cent; cardiovascular defects, 8.0 per cent; hernia, 4.9 per cent; ears, 4.4 per cent; neurologic disorders, 4.1 per cent; eye defects, 4.0 per cent; tuberculosis, 3.4 per cent, and mental deficiency, 2.6 per cent. These ten defects combined accounted for 80 per cent of all rejections during the year.

Tuberculosis, cardiovascular defects and musculoskeletal defects were of greater relative importance as causes for rejection among older men than among those under 26, who were more apt to be rejected because of mental and personality disorders.

Mental disease was the largest single cause for rejection in all the occupations except the two groups of laborers (farm and other). In these two groups mental deficiency and failure to meet the minimum intelligence standards caused the highest percentage of the rejections. Negroes are, of course, particularly concentrated in these groups.

Craftsmen and the professional and semiprofessional groups had a larger percentage of rejections for musculoskeletal and foot defects than did any other major occupations. Students had the highest percentage of rejections for cardiovascular defects; that for hernia was highest among service workers other than domestic and protective (barbers, beauticians, hospital attendants and others). The highest percentage of eye defects noted as cause for rejection was among students; tuberculosis and neurologic disorders each accounted for relatively more rejections of emergency workers and the unemployed than of any other group. Of the gainfully employed registrants, however, the highest percentage of tuberculosis rejections was among domestic and protective service workers.

These figures emphasize again the importance of the standards by which men are accepted or rejected in evaluating the general physical condition of any age group.

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[1] Medical Statistics Bulletin No. 4, National Headquarters, Selective Service System, Washington, D. C., June 1, 1946.

Current Comment

THE TAFT-SMITH-BALL-DONNELL BILL

Elsewhere in this issue appears a digest by the Bureau of Legal Medicine and Legislation of the Taft-Smith-Ball-Donnell national health bill. Physicians who read this carefully will realize that the principles set forth in this measure more nearly approximate the principles of the ten point national health program of the American Medical Association than any of the other health measures thus far proposed. It provides for a national health agency under medical direction; it provides for assembling health activities of the federal government in a single agency; it recognizes the principle of local responsibility and local control; scientifically it requires surveys to determine need before allocation of funds and does its utmost to avoid pauperization. Unusual is the inclusion of a special appropriation for prevention and control of cancer through the United States Public Health Service. The bill will be subject to hearings by the appropriate committees of the Senate and House of Representatives before final action is taken. Obviously complete approval will await the amended final text that usually evolves from the hearings.

STREPTOMYCIN FOR URINARY TRACT INFECTIONS

The results of a clinical study of streptomycin therapy of gonococcic urethritis, nonspecific urethritis, epididymitis and prostatitis have been reported by Pulaski.[1] The patients were resistant to treatment with the sulfonamides and penicillin. Symptoms of gonorrhea disappeared rapidly in 5 out of 9 patients following therapy with streptomycin without evident extension of infection to the prostate. In 2 or 3 patients whose prostates were enlarged the combination of prostatic massage and streptomycin eliminated the organisms. Treatment of 1 patient with prostatitis and 1 with urethritis and epididymitis failed. The usual amount of streptomycin administered was 0.5 Gm. dissolved in 5 cc. of isotonic solution of sodium chloride given intramuscularly every three hours for six days. Two patients with nongonococcic urethritis and 4 patients with nongonococcic urethritis and prostatitis were studied. The uncomplicated conditions responded readily to streptomycin and the patients have not shown signs of infection since. Four patients in whose infections prostatitis was a notable feature failed to be cured by streptomycin. Four paraplegic patients with indwelling catheters and epididymitis due to various organisms were also treated with streptomycin. In their infections streptomycin also failed, indicating, as with the prostatitis, that the drug did not find its way into the epididymis in sufficient concentrations to be effective. One patient with bilateral pelvic inflammatory disease was improved clinically but not cured by a ten day course of parenteral streptomycin therapy. These results suggest the need for further investigation of the use of streptomycin in the treatment of genitourinary infections.

REVISION AND EXPANSION OF THE BIOLOGICS REGULATIONS

The first Biologics Law was enacted July 1, 1902. When the 78th Congress consolidated and revised the laws relating to the Public Health Service, the Biologics Law was included. This law now appears in part F of the Public Health Service Act of July 1, 1944. These changes have necessitated a revision of the Regulations which are required to be prepared for governing the manufacture and sale of biologic products and to insure the continued safety, purity and potency of the preparations. The Regulations were published in the *Federal Register* on Jan. 21, 1947 and became effective thirty days later. As is indicated in these regulations, the scope of the Biologics Law is broadened somewhat so that diagnostic biologic products, if administered or applied to a person or prepared from or with the aid of a biologic product, may now be distributed in interstate commerce only if prepared by a licensed laboratory. Included in these categories are blood grouping serums, Rh typing serums and allergenic diagnostics, in addition to a number of less widely distributed preparations. Information as to the status of any of these products or the requirements applicable to them may be obtained from the Biologics Control Laboratory, National Institute of Health, Bethesda 14, Md.

RESIDENCIES IN VETERANS' HOSPITALS

The forty-third Annual Congress on Medical Education and Licensure featured a round table symposium on the cooperative enterprise of the Veterans Administration and the medical schools in providing a high quality of medical care to veterans as well as residency training for physicians. Participating in the informal discussion were representatives of the Veterans Administration and the deans of schools in which the program has been developed furthest. This discussion, abstracted elsewhere in this issue, contains much useful information for those engaged in the project, especially medical schools just commencing the program. In the symposium answers were provided for such important questions as the authority to appoint or dismiss staff members and residents, the manner in which supplies and equipment may be secured with dispatch, research in veterans' hospitals, suggested internships, difficulties of geography and mechanisms for "trouble shooting." The whole program, the participants agreed, has vastly improved the medical care of veterans and must be made to work. Dr. Paul Magnuson, representing the Veterans Administration, stated that "the work being done by these medical schools under the direction of the deans' committees has been the greatest accomplishment to date in the relationships between government and private medicine."

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[1] Pulaski, Edwin J.: Streptomycin Therapy of Penicillin Resistant and Sulfonamide Resistant Specific and Nonspecific Urethritis, J. Ven. Dis. Inform. 28: 1 (Jan.) 1947.

ORGANIZATION SECTION

ANNUAL CONGRESS ON MEDICAL EDUCATION AND LICENSURE

Forty-Third Annual Meeting, Held in Chicago, Feb. 10, 1947

Dr. Herman G. Weiskotten, Syracuse, N. Y., Presiding

RESIDENCY PROGRAMS IN VETERANS' HOSPITALS

A ROUND TABLE DISCUSSION

Participants in Discussion

Moderator:

- Loren R. Chandler, M.D., San Francisco, Dean, Stanford University School of Medicine.

Discussers:

- E. H. Cushing, M.D., Washington, D. C., Chief of Educational Division, Veterans Administration.
- Harold S. Diehl, M.D., Minneapolis, Dean, University of Minnesota Medical School.
- Tinsley R. Harrison, M.D., Dallas, Texas, Professor of Internal Medicine, Southwestern Medical College.
- Paul B. Magnuson, M.D., Washington, D. C., Acting Assistant Medical Director for Research and Education, Veterans Administration.
- J. Roscoe Miller, M.D., Chicago, Dean, Northwestern University Medical School.
- Burrell O. Raulston, M.D., Los Angeles, Dean, University of Southern California School of Medicine.

Abstract of Discussion

Dr. Chandler: *Dr. Weiskotten and Members of the Congress:* This panel will discuss the resident training program in Veterans Administration hospitals. (Dr. Chandler then introduced the discussers.)

I think it is fair to state that every one in the medical profession, particularly those in medical schools, not only is interested in the present veterans' medical care program but is anxious to see it work. This program involves very intimate cooperation between the Veterans Administration, medical school faculties and hospital residents. This collaborative enterprise is now about a year old, so that it is appropriate to discuss at this time some of the problems faced by the faculties, deans' committees and the Veterans Administration. By way of introduction to the discussion, Dr. Magnuson will summarize progress to date.

Dr. Magnuson: Undoubtedly most of you are familiar with the principles on which this program was started. It was established because we had to have good doctors and have them fast. We had millions of men returning from the services in addition to a considerable patient load from the previous war. Our hospitals were pretty well filled when men began to return from this war. There were three problems: first, the medical care of the veteran; second, the provision of training for physicians whose training was curtailed by the war; third, supplying of useful work and an income for young returning medical officers. It was impossible to secure competent full time men for the job. Furthermore, we felt we could get a better quality of men on a part time basis, so we appealed to the medical schools. There was not one single negative answer in reply to our request for cooperation. Within five months from the initiation of this training program there were fifty-seven medical schools collaborating with the veterans' hospitals. There are now some 1,400 to 1,500 residents in veterans' hospitals which are staffed by more than 1,500 part time men of instructor to professorial rank from the fifty-seven approved medical schools. The work being done by these medical schools under the direction of the deans' committees has been the greatest accomplishment to date in the relationships between government and medicine. So far the program has been free from political interference. When a Senator or Congressman or an influential citizen telephones, wanting one of his friends appointed to a hospital position, we simply say "Senator, we don't select the hospital staff. Physicians are recommended by the deans' committees to the manager of the hospital. They are appointed on that recommendation." In this way the hospitals are staffed for the most part by the medical schools, with only a skeleton staff of Veterans Administration men. The program is working unbelievably well despite the short time since it was started.

Dr. Chandler: Dr. Miller, Northwestern was perhaps the first school in the project. How is it working?

Dr. Miller: We were the first group organized. We have been operating a little over a year now. We also are unique in that I think we have the largest hospital—Hines, with 3,500 beds. Northwestern and the University of Illinois are cooperating in the venture. We have divided the Hines services among the faculty of the two universities. At the present time we have about 144 residents in training. Our great difficulty is that of geography. The hospital is located some miles from the center of the city. It takes thirty to forty-five minutes of driving through traffic to get there, and a good deal longer on the common carriers. As a result, the hospital offers little to us as far as teaching or research is concerned, but we have been able, because of our large voluntary and partly paid faculty, to cover the services quite adequately.

Dr. Magnuson: Dr. Chandler, I should like to emphasize that General Bradley and General Hawley promised, when I went to Washington, to build the new veterans' hospitals as close to medical schools as possible. I specified that, if possible, they should be sufficiently close so that they could be connected with the university hospital and medical school by tunnels. Dr. Miller is entirely correct about the distance between Hines and the two medical schools constituting a tremendous handicap. Fortunately, we now have the ground to build across the street from Passavant Hospital at Northwestern University and across the street from the University of Illinois hospital on the West side. These constructions have been approved and funds appropriated.

Dr. Diehl: At Minnesota our situation is a little different from that in Chicago. We were the second institution to organize a program in the veterans' hospital, commencing about two weeks after the program at Hines. We were fortunate in the location of the hospital. In Minneapolis the veterans' hospital, an 800 bed institution, is located about 7 miles from the medical school. It is readily accessible by a very easy drive of fifteen to twenty minutes, even though it is not just across the street. We started to select the staff a little over a year ago. Of the old medical staff of the hospital five have been retained. One of these is serving in an administrative capacity, two have been appointed as residents and two are serving as members of the professional staff. The latter two are professionally competent men who have since been appointed to the university faculty. The rest of the staff is completely new. At present the hospital staff consists of twenty-one consultants, seventeen of whom receive compensation from the Veterans Administration. Ordinarily these consultants make one visit a week. Some go to the veterans' hospital only on call. Consultants are compensated at the rate of $50 for a half day at the hospital in almost all instances. In addition, there are thirty-seven attending physicians on the staff. These men are also certified by the boards. They spend a half day on each visit to the hospital. The majority of them make daily visits, although some make three visits a week, depending on what we think is best for the service. We have attempted to keep the appointment of full time men of the medical school faculty at the veterans' hospital to a minimum. There are now 107 residents on the staff. Eighty-four of those are on service in veterans' hospitals and the remainder are on services in affiliated hospitals. I think it is interesting to note what this program is doing to improve and extend medical service to veterans, which is the primary object of this whole program. A comparison of certain statistics for 1945 and 1946 in this hospital reveals that in 1945, when this hospital was operated by the old Veterans Administration staff, there were 4,750 admissions. In 1946, when it was operated under the new staff, even though part of the year was devoted to building the staff, there were 6,506 admissions, an increase of 1,756 patients. The bed capacity was unchanged. Thus, under the new program over 1,700 patients were given hospital care who, under the tempo of the old system, could not have been given assistance. This is an increase of 37 per cent. In spite of this increased admission rate the mortality rate has decreased 29 per cent. Those figures seem to be indicative of what this type of program can do to improve the medical care of veterans.

DR. MAGNUSON: Admission figures may be misleading. In many of our old Veterans Administration hospitals they ran what was called an admission ward, which was filled almost daily with people who might stay only two or three days. Furthermore, in some of our deans' committee operated hospitals the admissions have decreased because at least 50 per cent of the people who apply for admission are not admitted because they do not need hospitalization. In the old days they used to take everybody who applied.

DR. HARRISON: Our experience in Dallas is similar to the experiences cited. There is the difference that we have been concerned with two hospitals, one 10 miles south of us and one 30 miles to the north. In the last year we have developed services in both of those places. The geographic problem has been difficult but not insuperable. I think that every one finds that the care of veterans is improving wherever there are deans' committees' hospitals. Most of us feel that medical school training in the country, in general, is definitely superior to hospital training. Only a fraction of our graduates have been able to secure appointments in first rate hospitals. One of the tremendous advances resulting from these veterans' hospital programs is to strengthen that part of medical education which has been weakest, the Achilles heel of medical education. The kind of care the veterans will receive depends on the caliber of the staff. Building a good staff takes time. If we maintain high standards for residents, it takes longer to develop a residency program. If we maintain high standards for full time employees who are not appointed by the medical school but about whom we can make recommendations, it takes longer. But, as time goes on, it is becoming increasingly possible to recommend for full time positions a small skeleton staff of men who are of superior caliber. All of us who have been concerned with this in Dallas are extremely enthusiastic about this trend.

DR. MAGNUSON: Yes, every time I send a good man down from the central office to help a dean he steals the man, makes him chief of a service and puts him on the faculty.

DR. RAULSTON: In Los Angeles we started this program at the Sautelle and the Wadsworth Memorial hospitals on July 1, 1946. We have obtained the type of attending man we desired: men certified by a board, who were veterans and had appointments on the teaching faculties of one of the two medical schools. Ours is a joint project of the College of Medical Evangelists and the University of Southern California, operating with reasonably good feeling. Not only have we been able to obtain an adequate number of properly qualified attending physicians, but in some departments the demand for appointments is sometimes so great as to become embarrassing. Our hospital is located in a suburb of Los Angeles, and geography is not a serious problem. We have had excellent cooperation nearly always from the local veterans administration and certainly all the time from headquarters in Washington. We have been overwhelmed with applications for residencies, as is generally the case. We have about eighty residents in this hospital, with a potential capacity of about 2,000 beds and a present census of about 1,400 patients. Our first consideration is the care of the patients. Evidence of their satisfaction comes from innumerable letters, verbal statements and the great reduction in complaints from patients. The teaching program for the residents has been surprisingly good.

DR. CHANDLER: There is no question about support of the deans' committees at the Washington level. But there is considerable question regarding the full support of the program from the Bradley-Hawley-Magnuson level all the way down to the local managers. I should like to put this question: What should be the fundamental basis for cooperation between the Veterans Administration and the medical schools in order to operate this program successfully with university standards, Dr. Cushing?

DR. CUSHING: The central office turns over the teaching program entirely to the deans in the medical schools. We don't want to try to tell any one out in the field how to practice or teach medicine. We know that the deans are expert in teaching and practicing medicine throughout the country. We ask them to do likewise in the veterans' hospitals.

DR. DIEHL: I should like to comment on the question you put, Dr. Chandler. This project has been a unique and remarkable experience. We embarked on this extensive program a year ago with no formal agreement, blueprint or chart of procedure. Dr. Magnuson simply came to us and said "We want you to take over and run this hospital as you would a university hospital." Some deans have asked me "What sort of a contract do you have with the Veterans Administration?" We haven't any. The arrangement is entirely a matter of mutual confidence and common interest. There are advantages to the medical school in such a plan. We have no obligation to continue this program other than a moral one, which is all the Veterans Administration asks. They know we will continue with the project as long as high quality is maintained. We could not have asked for better support than we have had.

DR. MILLER: That is essentially our experience; we have had no trouble even at the local level. The educational policy of the hospital and the professional care of the patient are entirely in our hands. We have been fortunate in having managers sympathetic with the program and anxious to help, who have in no way hampered our program. Such difficulties as we have encountered have not been at the local or the Washington levels but in the intermediate echelons, although this has not been serious enough to constitute a great handicap.

DR. MAGNUSON: We must all realize what a tremendous expansion has occurred since July 1945 in the Veterans Administration, which is now taking care of a hundred thousand patients. Under these conditions it is absolutely impossible to secure a completely new staff immediately. We had a lot of men in the Veterans Administration who were trained over twenty years to say "No, it can't be done," instead of "Yes, we will do it." They must be reeducated or replaced. Our hospitals vary greatly, depending on the caliber of the personnel in the supply department and in administrative and professional posts. Some of these fellows cannot throw away the book and get things done as ordered by General Bradley, who insists that anything that is for the good of the patient can be justified. Despite everything, some of these old Veterans Adminstration men will still say "Well, that wasn't the way it has been done for the last twenty years. We have to get everybody's approval from here up to Washington and back again." The appropriate orders have all been issued, but to try to get the idea through some of the thick skulls is a very difficult job. You will have to hammer from your end and I promise you we will hammer from ours; eventually we shall meet: the fellow in the middle is going to have a hell of a time.

Dr. Diehl: Whenever we have encountered difficulties we have done as Dr. Magnuson urges: "*Don't write me a letter, telephone!*" This formula has ironed out problems as rapidly as anybody could possibly hope.

Dr. Chandler: The answer seems obvious: If all is not well, telephone Dr. Magnuson.

Dr. Cushing: We are often asked what fields of medicine are represented by our residencies. We don't have any service connected obstetrics or pediatrics at the present time. This includes pediatric orthopedics and gynecology except for occasional cases.

Dr. Chandler: This touches on an important matter of policy: should the residency training programs in a given veterans' hospital be confined to those fields in which the training can be done entirely at that hospital?

Dr. Raulston: We have two veterans' hospitals in Los Angeles. Apparently it is the policy of the Veterans Administration to develop certain residency services in one hospital more than in the other, so that the two may be supplementary We propose to rotate our residents from one of those hospitals to the other in order to improve the educational program. We find it exceedingly difficult to add affiliated services in other hospitals, because Los Angeles has very few teaching facilities in its private hospitals.

Dr. Diehl: We believe that there should be a free exchange and rotation of residents between the veterans' hospitals and our other teaching hospitals. In fact, our deans' committee would like to make some assignments to other hospitals for all residents in the veterans' hospital. Our orthopedic residents now go elsewhere for their experience with children and corrective orthopedics. Some of them will go to general hospitals for the traumatic type of surgery. Some of our residents at the veterans' hospital spend time at the University Hospital, at Minneapolis General Hospital and some at private hospitals where good surgical training is offered. In internal medicine there is a rotation program in which most if not all of the residents at the veterans' hospital have some work at the Minneapolis General Hospital.

Dr. Miller: The problem of affiliated services is much more difficult in Chicago for geographic reasons. Practically every service we offer is complete in the veterans' hospital except for the basic medical sciences and children's orthopedics.

Dr. Cushing: We have a rule that 50 per cent of the resident's time can be in outside hospitals. We prefer to have the men get their start in the Veterans Administration hospitals and obtain their outside training later. Many people have been asking about the duration of the appointment of the resident. It isn't necessarily a flat three year term. The deans' committees determine this. The committee periodically reviews the work of the residents; if they are good they can continue; if they are unsatisfactory they can be dismissed at any time.

Dr. Chandler: Who has the authority to make such decisions?

Dr. Cushing: The central office or the Veterans Administration has nothing to do with it. The deans' committee is the group that is responsible for the training of the residents and they are the men that select the residents and decide when they should leave the service either because of unsatisfactory work or because they have completed their course of training.

Dr. Harrison: Regarding affiliated hospitals, much depends on the field of medicine involved. In some fields, such as psychiatry or orthopedics, it may be necessary to work at affiliated hospitals for a relatively long time. In other areas, such as general surgery and internal medicine, there is ample clinical material at the Veterans Administration hospitals to train the men. Regarding the work of the resident at the medical school, there should be a great deal of flexibility. For the rare few, research is better than a formal course. Other residents might better be assigned to some preclinical department.

Dr. Magnuson: Laying out a formal course for men who are supposed to be educated and want to become specialists is perfectly asinine.

Dr. Chandler: I want to be sure that we are clear on the question of duration of appointment of residents. Some of these appointees seem to think they have a bona fide guaranty of three years' residency training, win, lose or draw.

Dr. Magnuson: You can terminate anybody's appointment in the Veterans Administration any time he doesn't do his job or isn't of service, and that goes for everybody. The residents can have their service discontinued at any time, even though the man may have started on a two year or three year program which was planned for him at the outset. Since the law definitely limits the training outside a veterans' hospital to 50 per cent of the time, it is a good deal better to assign men on a two year training program, for example, to do the first year of work in the veterans' hospital. To comment further on the problem of affiliated hospitals: Most residents can be trained within the Veterans Administration hospitals without going back and forth between those hospitals, the medical schools and other hospitals. It is well to keep him on service and give him his training within the veterans' hospital as far as possible.

Dr. Cushing: I wish to remind you that appointments to the attending staff, by law, are for one year, from the first of July to the last of the following June. However, the year's service can be arranged for the attending and consultant staff as the deans' committees desire. A man may be an attending physician every day for three months and then be off for three months, say. Or there may be an alternate day system. In any case, the termination of the appointment officially is on the thirtieth of June. Reappointments should be recommended by the deans well before that date each year.

Dr. Chandler: Nearly everybody connected with the Veterans Administration hospital training program has asked about provisions for research by residents and staff. What is being done?

Dr. Magnuson: We have the authority to provide funds directly from the central office to establish research laboratories in our hospitals, although the hospital concerned has to find the space in the first place, which is arranged locally. We have no money for new building construction for research. New construction is not acutely necessary because usually the hospital can find the required space. When that is found and the deans' committee plans a research laboratory with its equipment, specifying what is required and its cost, the expenditure can be authorized, so that the hospital can buy what is required. As regards additional research personnel, one or two technicians will suffice in most instances. The research problems that are contemplated should be described to us. When approved, they can be included in the hospital budget and be continued from year to year as seems justifiable. All new research problems must be referred to the Department of Research and Education to avoid our wasting funds on mental abortions labeled as research ideas. We cannot let anybody do whatever "research" strikes his fancy any more than you deans can in your medical schools. Each project must be approved and assigned necessary funds from the central office. Continuing financial support will be appropriated through the hospital management on its research fund from year to year. We expect to establish and support research laboratories in every veterans hospital associated with a medical school, under the provisions of the general budget.

Dr. Chandler: How many veterans' hospitals are already engaged in research, or how many requests for approval of research projects are under consideration?

Dr. Miller: We have already found space at Hines for a rather adequate laboratory for research in clinical neurology, and considerable space has been earmarked for cancer research.

Dr. Diehl: As soon as our staff was organized and seemed to be meeting the clinical responsibilities, it desired to commence investigative work for the benefit of its patients and also of the residents. We were able to find some additional space in the building and by setting up quonset huts arranged for space locally. Then we planned the installation of the scientific equipment necessary for research laboratories in medicine, surgery, clinical physiology, bacteriology and other subjects and submitted the program to Washington. Subsequently our veterans' hospital received a special grant of funds to provide these research laboratories; they are now being equipped.

DR. CHANDLER: About how long did it take after your request before you got the required authorization?

DR. DIEHL: Well, we submitted the request and wondered why nothing happened, for a time. Apparently the papers got lost along the line somewhere. So I telephoned Dr. Magnuson. Within twenty-four hours a telegram came to the local branch office authorizing the necessary expenditures.

DR. HARRISON: Because research opportunities will be available at veterans' hospitals, staff appointments may well become the most desirable full time associate professorship, particularly in medicine and surgery, that this country can offer. The salary scale is excellent, and other advantages are real. Therefore the selection of the staff should not be rushed too rapidly just because there is a job to be done. Let us go slowly and attract into these full time positions the best available medical talent.

DR. RAULSTON: I should like to report that we have research programs going on in both of our hospitals; they are progressing very nicely.

DR. DIEHL: The staff physicians at our hospital have been amazed at the interesting clinical material they encounter, not only from the point of view of clinical medicine, but from that of teaching and research. They do not deal with the dull, uninteresting patient anticipated by many.

DR. CHANDLER: Should we add interns to the veterans' hospitals?

DR. CUSHING: The law limits us to residents at the present time, but a change in legislation is under consideration to allow internships in Veterans Administration hospitals.

DR. MILLER: There is no reason why we could not start internships at any time at Hines. Our residency organization is well adapted for an internship program.

DR. RAULSTON: At the outset of this program Dr. Magnuson said he wanted these hospitals to be like university teaching hospitals. I don't know of any such hospitals that do not have interns.

DR. CHANDLER: A teaching hospital has medical students in clerkships, interns, residents, full time and part time attending teachers, research men, clinicians and directors. May we anticipate that veterans' hospitals will eventually encompass these activities and become true university teaching and medical care hospitals?

DR. MAGNUSON: Remember that we are starting a new program. It must prove its worth to the people of this country. The public must learn that the men in veterans' hospitals are not employed as guinea pigs. We have started with an educational program for residents, who are all veterans, who have been medical officers. They are all licensed to practice medicine. The law plainly states that doctors who take care of veterans must be licensed to practice medicine. In many states, licensure requires an internship. Some states do not. Rather than urge men to go to such states and take examinations on graduation from medical school to comply with the law, should we not seek to change the law after convincing the public that the veterans benefit from educational programs? It is significant that the American Legion Rehabilitation Committee has asked when we plan to start internships. It recognizes that all good hospitals have interns. Internships are on the way, but first we must change the existing law. As regards medical students serving as clinical clerks, I know of no law against it.

DR. DIEHL: This question of interns is interesting. Recently the dean of the medical school at the University of Manitoba and I discussed our program. He stated that they have an arrangement with the veterans' hospital in Winnipeg which enables them to conduct not only graduate and intern training but also clinical clerkship teaching. He was sure the Veterans Administration in Canada would dislike changing this program. Veterans' hospitals can provide excellent internships. Of course, there are some limitations. A complete rotating internship would require affiliations with other hospitals. In any case the veterans and the public must be made to realize that an acceptable internship program improves the care of patients.

DR HARRISON: A hospital can attract better residents if there are interns. Residents are commonly recruited from the intern staff. Again, we shall obtain better interns if there are clinical clerks in the hospital. There is no question but that the caliber of men we attract to these residencies will be higher if we have interns and clinical clerks in the veterans' hospitals. Every day we encounter men who prefer residencies at civilian hospitals, despite a lower income, because there is teaching of interns and clinical clerks.

DR. CHANDLER: Apparently we may anticipate internships in due course of time, following on an amendment to the present law. What about medical libraries in the various hospitals?

DR. CUSHING: We are having considerable trouble with our medical libraries. I think the system is improving and we are gradually getting more books and journals into the hospitals. There is plenty of library money available. You need only write and request the books you want. There is money for binding and for duplicate copies of books. But you must order the books and journals from us.

DR. CHANDLER: What about supplies and equipment in veterans' hospitals, particularly in the laboratories? Are they adequate?

DR. HARRISON: That has been a difficulty because orders must go through a supply officer not directly concerned with medicine and surgery. A change is needed in this procedure.

DR. DIEHL: That has been our worst problem also. I judge that much depends on the local supply officers. Some really go out and get things. Others sit behind a desk and discover reasons for not getting things.

DR. CHANDLER: Speaking for Fort Miley in San Francisco, being jointly operated by the University of California and Stanford, this problem has been our big headache too.

DR. MAGNUSON: Supply and equipment have been the worst difficulty in the central office, and again I must remind you that it depends entirely on your local supply officer employing the existing machinery to get whatever you and the patient need at once. You should exert every pressure to get action. The deans' committees must demand what they need to treat patients. But be reasonable. Don't order fifty microscopes if twenty-five will do. As to drugs, laboratory equipment and the like, if the supply department does not have them, the supply officers have full authority to buy them on the open market. There is no reason for delay except inefficiency of a local supply officer. Everybody in the hospital is responsible to General Hawley. We are trying to convince these local administrators that their sole duty is to service the doctor so that he can serve the patient. As you know, the country is divided into thirteen districts, so that many problems should be handled locally. In the old days you had to telephone Washington to get permission to call in a consultant to take care of a patient who was acutely ill. A patient was most unfortunate if he became acutely ill on Friday afternoon after half-past 4, because he couldn't be taken care of until Monday at half-past 9.

DR. CHANDLER: We have been "on the air" for an hour and ten minutes. Perhaps we should sign off now, with this statement: the wisdom, integrity and sincerity of the efforts on behalf of this program at the Washington level warrant the whole-hearted support of all of us. This thing has got to work. Thank you.

NATIONAL CONFERENCE ON RURAL HEALTH

Second Annual Meeting, Palmer House, Chicago, Feb. 7 and 8, 1947

DR. F. S. CROCKETT, Lafayette, Ind., Presiding

(Concluded from page 785)

SATURDAY, FEBRUARY 8

Hospital Facilities and Health Centers for Rural Areas

MR. GRAHAM L. DAVIS, Director, Division of Hospitals, W. K. Kellogg Foundation, Battle Creek, Mich.; Member Advisory Board, Federal Hospital Council: This Michigan project in a way grew out of the activities of the W. K. Kellogg Foundation. Its large interest for the past seventeen years has been a seven county rural health project in southwestern Michigan. The foundation believes that its resources can be used to best advantage in applying knowledge rather than in research or relief activities. So we have tried to find out what the rural health and welfare problems are in those seven counties, and that activity has been expanded to all of the state of Michigan. We are inclined to believe, based on our experiences there, that the large weakness in rural hospital and health service is the absence of good diagnostic facilities and services. In other words, to treat a patient successfully you must find out what's the matter with him; and the modern doctor uses the x-rays and the laboratory to find out.

This Michigan hospital study was made by the Commission on Hospital Care as a pertinent study that other states might use in making similar studies and, as you know, now every state in the country is making a hospital study to comply with the requirements of Public Law 725, the Hospital Survey and Construction Act. The Michigan study has been published and widely distributed. The most interesting thing about the Michigan study was that the group of thirty-five persons the government selected to cooperate with the Commission on Hospital Care made a recommendation that the 292 general and allied special hospitals that we have in Michigan should be reduced in number to 110 located in seventy-one hospital areas.

The basic principle followed in defining these seventy-one hospital areas was that you shouldn't build a hospital where the need was for less than 50 beds. You cannot profitably use the services of a minimum of technical personnel needed when you have less than 50 beds averaging say 30 patients a day. A population of some 15,000 is necessary to support such a hospital. We also decided there should be hospital facilities within 30 miles of everybody in Michigan. When you get up here, you don't have 15,000 within a radius of 30 miles, so we had to compromise on a small unit; but the recommendation is that it must be supplied as a branch of the nearest large hospital.

The American College of Surgeons doesn't survey hospitals with less than 25 beds. It approves only 47 per cent of the hospitals with from 25 to 50 beds, but 93 per cent of hospitals with 100 or more beds.

The major weakness in rural medical service and hospital care is shown by the top half of Michigan. There are about half a million people there. North of that line there is only one radiologist, and there are no pathologists. The foundation located the first pathologist in the north peninsula at Marquette on the 1st of August. The major purpose of our program is to improve the quality of service in that area. There is one doctor 65 years old to take care of 10,000 people. At St. Ignace there is no hospital, there are 7 or 8 thousand people, one doctor over 80, and two osteopaths. Three of these hospital areas have no hospitals, and it seems that those three areas should come first. Rogers City, St. Ignace and L'Anse are the three. In fourteen other rural areas, ranging in population from 15 to 35 or 40 thousand, the hospital is an old house or similar structure. Under the act, preference must be given to rural areas. The 32 million dollars to be spent in the next five years in Michigan under this plan will take care of about one third of Michigan's needs for adequate hospital facilities. We need to spend about 90 million dollars to modernize and enlarge Michigan's total hospital facilities.

The major recommendation in this Michigan report is that the general hospital should be the focal point around which you develop the community health service, in addition to its traditional functions. In this integrated system we add 181 so-called public health and medical service centers. In most instances they need not have beds at all, and they would operate as branches of the general hospital. These units would have the office of the public health nurse in the community, two or three doctors in this town of a thousand people, a certain amount of diagnostic facilities, the dentist's office might be there, and so on. In some of these more thinly settled areas it is 25 or 30 miles to the nearest hospital, and we anticipate that there should be beds for normal obstetrics and perhaps emergency cases and certain types of medical cases that the general practitioner in those communities could treat.

Report of Committee on Hospital Facilities and Health Centers

DR. ALLEN T. STEWART: The problem was divided by the committee under three general topics: 1. Is there a need for improved medical care in rural areas? 2. What is being done now toward improving that condition? 3. What further is there to do? First the committee debated the definition of the terms "community clinic," "public health center," "hospital" and "medical center." We recommend that the definition of these terms be clarified.

Dr. A. C. Bachmeyer, in discussing the first topic, said that, according to a 1940 census, from between 19 and 20 million people lived in the open country. In over 11,171 of these communities having less than 1,000 population there were only 151 hospitals, 85 per cent of which had less than 50 beds. In the open country outside of all villages there were only 90 hospitals in the United States. Over 50 per cent of these hospitals had less than a 50 bed capacity, and most were special type institutions.

Next was the question What is being done toward improving the condition? and Dr. A. B. Wilson of the Public Health Service was called on to explain the Hill-Burton bill, or Public Law 725. Dr. Wilson stated that before any funds are made available each state must evolve a long range plan based on its needs as ascertained by survey and have the plan approved by the Surgeon General. Mrs. Weagly informed the committee that Senator Taft had told her that under the terms of the bill such an approved community project would receive federal assistance to the amount of one third of the cost of construction and equipment, not including the cost of the site.

The third point concerns the establishment of interested farm groups. The committee believes that these needs can be handled in the execution of the following four point program: 1. Actual formation of individual state plans now being made, so that federal appropriations may be secured. 2. A campaign to educate the population in regard to the medical situation in rural areas. 3. Community action. 4. Cooperation among community groups with the state plan.

Under community action falls the establishment of facilities for providing medical care. Even though 20 million people live in small towns and villages, it need not be assumed that all of these small towns must have hospitals. The danger to avoid is building a hospital that cannot be adequately supported and which therefore cannot render a high quality of service. Before any rural community builds a hospital, a careful study should be made. Hospitals should be constructed only where the size of the population, the availability of technical personnel, transportation and topographic factors and methods of financing justify the establishment and indicate continuous successful operation of such facilities. In this manner the medical profession would be brought into outlying districts on a consultation basis, the practitioner would have access to hospital facilities and the medical profession would exercise control over the quality of medical care in that area. These three points just discussed depend for their success on the fourth, the cooperation among community groups with the state plan.

ALLEN T. STEWART, M.D., Chairman.
MRS. ROY C. WEAGLY, Co-Chairman.
A. C. BACHMEYER, M.D.
MRS. JEROME EVANSON.
MRS. J. LANING TAYLOR.

COMMITTEE.

DISCUSSION

Dr. Carl F. Vohs, St. Louis: We shouldn't lose sight of the long range program of hospital construction. Some facilities for the care of the aged, from the standpoint of medical care and custodial care, must play an important role in the development of our facilities. From the standpoint of prepayment medical plans I think that the hospitals must create some facilities that are cheaper than the $10,000 program that is being planned.

Dr. Ernest E. Shaw, Indianola, Iowa: We need to know just why no hospital with less than 50 beds is important. I practice in a town of 5,000 and I have a collaborator who practices in one of 1,200 and he says I'm not a rural practitioner. I have seen a good many small hospitals which are very well run. I feel there is a place for a hospital of less than 50 beds. We have a group in the northern part of the state with a radiologist and a pathologist. Those men go out one day a week to five surrounding towns and spend a day. They also go out on emergency cases. Those hospitals of 20 beds are doing a bang-up job, that is, good pathology services; and it would be a shame to try to make a 50 bed hospital there. I believe in all those things being done, but 85 to 90 per cent of our patients can be taken care of any place where they have a bed. We get along very well. We can have good medical service at a cost much less than that required for these hospitals.

Dr. Roy Woolsey, Salt Lake City: Yesterday I advanced an idea that is coming from the industrial commission in Utah. Because of the location of mines away from Salt Lake City and Ogden, where the only large hospitals in the state are located, the practice has been for a long time in mining communities and in small farming communities of moving patients into the large hospitals. From that I develop the thought that in these 10 and 15 bed hospitals if there were patients who required specialists how much simpler and more convenient for the patient and the family to send the specialists to the small hospital. Let him go out and do the surgery and keep the people at home. I went 150 miles one afternoon and the next morning did some work in a very small hospital. The three doctors in this area cooperated. One gave the anesthetic, another assisted, and the other one looked after the general work in the community while the rest were tied up. We had three major pelvic operations during the morning. I came back that evening and the patient stayed at home. In fracture cases it is reasonably easy to have an orthopedist go out and have the work done in a small hospital. It's a thought that I think is worth considering.

Dr. Graham L. Davis, Michigan: I want to say that as a member of the Federal Hospital Council, which has had under consideration Public Law 725 and the discussion of the regulations under which that law must be administered, this issue of the minimum size of the hospital was carefully considered by the council at its meetings. The Federal Hospital Council includes those familiar with hospitals and those familiar with community needs and the proposal which had been made that no hospital be approved for a fund unless it had 50 beds was definitely not approved by the Federal Hospital Council; and the regulations which have been approved by the Surgeon General, by the Federal Security Administrator, and which will now be disseminated do not require that a hospital of less than 50 beds be not approved.

Committee on Methods of Bringing and Holding Physicians and Dentists in Rural Areas

Dr. H. B. Mulholland, Charlottesville, Va.: As a result of discussions yesterday and deliberations of the leaders of the panel last night we recommend: 1. The development of state and county health councils composed of representatives of the medical, dental, farm and other organizations concerned with the rural problem. We urge that these councils study the health needs and develop plans and programs for improvement of rural health in each particular area. 2. The development of adequate health facilities in rural areas where a competent survey has shown that these facilities are needed. We recognize that in order to attract and retain physicians and dentists certain fundamentals seem necessary: (*a*) provision of adequate medical facilities; (*b*) provision of a reasonable income for physicians and dentists in these areas; (*c*) stimulation of practice in groups; (*d*) a concomitant improvement of community educational and cultural facilities; (*e*) extension of good roads and the development of community understanding of its responsibilities with reference to all health matters. We also recognize that this whole problem is intimately tied in with the whole social and economic inadequacies in rural areas and the maintenance of a reasonable and stable income of rural people is the underlying factor in the achievement of these objectives. 3. The development through provision of funds in the various states of a program of medical and dental care, and this program should be best supplemented by a sound program of health education in the schools. 4. That the medical schools place more emphasis on the economic problems of medicine in the medical school curriculum. We suggest that medical students have practical experience in rural medicine in some point in their undergraduate courses. In our opinion a successful rural medical organization should include rotation of some interns through a coordinated hospital system including perhaps health centers.

J. S. Jones, Chairman.
Ned Burleson, M.D.
Frank Smith.
L. W. Morrey, D.D.S.
H. B. Mulholland, M.D., Co-Chairman.
Committee.

DISCUSSION

J. S. Jones, Minnesota: I rise to amplify the first recommendation, that is, the meetings in the communities, in the counties or parishes, whatever they may be, of a joint group of the professional people involved and leaders of the rural organizations in order that this program may become effective. After we go from this conference we shall be in the same place we were when we arrived unless we do something. This should be multiplied out in every community, and we believe this first recommendation will be carried out by all the people here.

Mr. Albert S. Goss, Master, National Grange, Washington, D. C.: We would endorse everything in the report, but I'd like to call attention to one thing. The recommendation was made for the state and county councils. These will bring our program into a working position, but I do not believe that these state and county councils will happen unless there is some leadership nationally. We should also have a national council made up of the American Medical Association, the farm organizations, the Parent-Teachers Associations and people particularly interested in rural health. It is difficult to create a council here. This group has no authority. It seems to me that a practical approach would be for the group to request the Board of Trustees of the American Medical Association to work with the leaders of the farm and other interested groups and organize a national council which could keep in touch with the development in the states and do other things at the national level to promote the worth while projects outlined in this report.

Mrs. Roy C. Weagley, Maryland: As a representative of the American Farm Federation, I should like to second the suggestion made by Mr. Goss.

Mr. William G. Mather, Pennsylvania: As a rural sociologist, I wish to emphasize that in the organization of these councils and in the planning for the location of hospitals and health facilties it should be remembered that the county is only a political unit. The farmers do not have loyalties to counties. Farmers live in communities. If this program is to be activated, it will have to reach into the community as a community. There is a loyalty there that can be capitalized on. If that loyalty is arbitrarily disregarded by following county or township lines there is an opposition that will also be encountered. I urge you to go with the psychology of the farmer rather than against it.

Dr. D. G. Miller Jr., Morgantown, Ky.: One point that has a great deal of bearing on bringing rural physicians and dentists into the community is to have a community where a doctor's wife is satisfied to live. I made ten attempts before being able to convince a young man and his wife that they could be happy in a town of a thousand population. Rural people adopt new ideas and new persons slowly, and you must live in a community two or three years before they are willing to accept you as one of them and follow your leadership in anything.

Lloyd C. Halvorson, Washington, D. C.: I didn't notice any mention of scholarships for rural students who might want to practice in rural communities. That is something that needs to be considered.

Eleanor Palmquist, R.N., Mississippi: We have done exactly that as far as the medical student is concerned. He has to sign a contract that he will come back to that community and practice a minimum of two and preferably five years. We make loans to a maximum of $5,000 to medical students when they come back to a rural community and practice. He cancels the entire indebtedness to the state if he practices five years.

Report of Committee on Voluntary Medical Prepayment Plans

Dr. James F. Doughty, Tracy, Calif.: As a result of the round table discussion the committee wishes to present the following recommendations:

1. Development of voluntary nonprofit prepayment medical and hospital care plans should be extended on a statewide basis, and such plans should meet the standards set up by the Council on Medical Service of the American Medical Association.

2. Prepayment medical plans should put on an educational campaign to increase preventive medical care and to encourage the development of local public health districts.

3. The enrolment policy should be as broad as possible but actuarially sound.

4. The need for facilities should be studied and provided for by local, state and federal funds as they are developed.

5. To meet the demand of the facilities developed, adequate personnel must be produced.

6. We recommend that provision be made in medical schools and hospital staffs for the training of general practitioners and that local plans be developed to encourage their residence and practice in rural communities.

7. Farm organizations and prepayment medical and hospital care plans should give more study to the development of methods for the sharing of costs for the care of the medically needy.

8. It is recommended that voluntary nonprofit prepayment medical care plans be developed on a statewide basis predicated on local needs, and we base this recommendation on the experience in some eighty-five medical society sponsored plans and some eighty-seven Blue Cross plans throughout the country.

We urge that copies of these recommendations be presented to the Council on Medical Service of the American Medical Association and to the farm organizations for further action.

J. Frank Doughty, M.D., Chairman.
Mrs. Paul Palmer, Co-Chairman.
Carl F. Vohs, M.D.
W. E. Garnett, Ph.D.
Joseph W. Fichter.
Committee.

DISCUSSION

Mr. Graham L. Davis, Michigan: In the last few years laws have been passed in a number of our states which impose restrictions on the freedom to organize voluntary nonprofit prepayment plans. A typical law similar in form to laws which now exist in some ten states requires that the organization of such plans must have the official approval of the state medical society. In a number of states the law provides that the plan cannot operate in any county unless at least 51 per cent of the physicians of the county approve the plan. The earliest law was in New Jersey. Others were passed in 1945 following a similar pattern. Irrespective of the motivation, these laws will have the effect of restricting the initiative of state or local groups to organize voluntary prepayment plans for themselves; and I think that the excellent effort of the American Medical Association in bringing this group together and in the endeavor to win cooperation between farm groups and organized medicine will not be promoted but will be put at a disadvantage by the establishment and continuance of such restrictions. If we are going to have voluntary nonprofit prepayment plans, let us have the broadest possible experimentation. I am not implying that initiative on the part of the people should not be accompanied by every effort to win and move forward with the cooperation of their physicians. Obviously, that is necessary; but a law that places control in the hands only of physicians of the money which is paid by the people for the benefit of those people and which is spent mostly on the physicians themselves is not a wise kind of law.

Dr. Norman M. Scott, Trenton, N. J.: The law in New Jersey, which was the first of its kind, was not instigated by the medical societies in New Jersey. The medical societies of New Jersey simply expressed an interest in trying to solve this problem in their own way. That's what we wanted to do; and when we attempted to do it the Commissioner of Banking and Insurance and the Attorney General said "You will have to have an enabling act because this is probably insurance. If it is insurance and you start to operate or if we consider it this and you start to operate, we'll bring an injunction against you and take it into court. If the court rules that it is insurance, you come under our domination and we write the enabling act. If the court rules it is not insurance, we will introduce a law into the legislature making it insurance." The medical society did not write the act. It was written by the state authorities to allow the medical profession to attempt to solve this problem in its own way as an effort of organized medicine. These acts may all be proved to be unconstitutional. If they are, they are discounted and we operate under the law covering nonprofit organizations. The decision of the state authorities was that it would require an enabling act and they wrote it. That's the background on that act.

Dr. B. J. Branton, Willmar, Minn.: In Minnesota we have an enabling act which covers all the various essential things. It says we must have a nonprofit prepayment medical plan under the enabling act. That word nonprofit to me means considerable. In our state association we spent a year and a half deciding what to do. We came out with two plans. The first plan was the one which would be nonprofit and therefore nontaxable in Minnesota. The second plan, which we are working on now, is to take all commercial insurance companies and bring out from them the finest contract which it is possible to get. We worked diligently on this. Many of us on that committee felt that a group that put on this sort of thing should be men of vision and know what it was all about. We have too many nonprofit voluntary and therefore nontaxable institutions in Minnesota. We have two ways of solving this in Minnesota. The first one is by taking cognizance of the fact that the Blue Cross has done beautiful work and by using the organization to help us in the carrying on of this business. Another way of going in this is by using facilities already available to the people of the state in buying voluntary prepayment medical and hospital care through the insurance carriers who are already in their field and paying their money to take care of the tax which we have to pay in the state of Minnesota. It seems that certain of the nonprofit organizations feel that they do not come under the insurance commissioner of the states in which they propose to operate. To carry on on an insurance level successfully, we should come under the insurance commission. I would say that in the states where it is necessary to have nonprofit, nontaxable prepayment plans, let them have it; but where it is not necessary, it shouldn't be. I believe that that word nonprofit should be deleted from this recommendation.

Dr. R. W. Fouts, Omaha: I had hoped that Drs. Scott or Branton might have said something in defense of the medical profession in connection with the recommendation of Mr. Davis.

If I understood correctly, the inference was that the medical profession who must deliver all of this medical service was standing in the way of the initiative the laymen and rural organizations might take in organizing prepayment medical insurance plans because we who must deliver this service insist that it be delivered under conditions that are satisfactory to the ethics and traditions of our profession. We have had in some parts of our country some experiences, and some of them are not ironed out yet so far as the Blue Cross plans are concerned or some of the medical services that they started out to render because of the fact that these Blue Cross plans are administered by laymen, and particularly hospital men who quite naturally will act to extend the scope of hospital activities in many instances to the point where it becomes the practice of medicine. That might easily happen to any medical service plan that might become dominated by hospital administrators or lay people who do not have the medical point of view. There is a reason why the medical profession insists that all medical plans receive the approval of the majority of physicians of that particular locality before they can receive the stamp of approval of the Council on Medical Service of the American Medical Association.

Mr. Joseph W. Fichter, Ohio State Grange, Columbus, Ohio: I share the sentiments of every one who has spoken from the farm groups that we feel that the American Medical Association has done a most constructive thing in inviting the farm organization representatives to participate in this conference and to represent a move that will bear fruit in a constructive way if similar meetings are held on a state or county level. However, I think the value of this kind of thing lies in the possibility that every one concerned can feel that the other fellow is approaching it with an open mind. If I were to have the temerity to make a suggestion about a conference of this kind, it would be this. If they are called on a state or local level, the medical profession should be not too much concerned about getting the farm groups or anybody to agree for the moment with what the medical profession thinks ought to be done. All of us are a little too much concerned with who is going to control the general setup of our health care program. It doesn't matter much what recommendations come out of this conference unless the people who receive them have full faith that you and I have entered this conference with an open mind and that neither group has any desire to persuade the other group before it is ready to be persuaded to see the other's way. I think that is tremendously important.

The recommendation made by Mr. Davis is excellent. The following resolution was adopted in the National Grange meeting: "Medical prepayment plans should be primarily controlled by the consumer or patient." There we have it—the National Grange by resolution taking that position, the medical profession taking the other position. Those of us in the Grange until the next meeting are bound by this resolution. It seems to me that, meeting here for two days, maybe both of us can find it is worth while to make some concession. One of the most constructive steps the medical profession could take would be to join with the farm groups in recommending that if legislation is introduced in the legislature it is a census of this group that the restrictive legislation ought to be done away with and the field opened up for consumers of health service to set up some different plan.

Mr. Harry L. Graham, Indiana Grange: The farm folk are interested in being able to pay for these services ourselves and we want a way over which we'll have some control. We don't want standards to go down. We know what it is to have poor hospital service or no doctors at all. We know what it is to go on low standards. We want them built up and expanded so the little people in the country get your kind of service; and I think the time has come when the medical profession should try to see our point of view on it and to have some faith and trust in the good sense and judgment of the farm folk. They faced this problem a long time when the medical profession didn't seem to be interested in it. We want to pay the doctors for their service but we must not and you must not sponsor legislation which will prohibit doing the thing which we want to do and what you need done for yourself.

Mrs. Jerome Evanson, North Dakota: The state level is where these suspicions are aroused. In the matter of state legislation, we were given the cooperation and the assurance that the medical association will go along on a bill to help bring better health facilities to our rural people. Then our secretary sees fit to have brought before the legislature another bill nullifying all the work that we are doing and instituting a bill in which the medical group will have a veto over anything passed by lay people in an advisory council. The meeting here is going to do no good if when we go back to our states we have the same fights on and the lip service but not the actual cooperation that is necessary to get the job done.

Dr. Page Jett, Prince Frederick, Md.: When we were fighting the great war we didn't say "Who is going to control it?" We doctors are delivering this service just as the Army and the Navy delivered service in the war. All we ask is that we shall not be hamstrung by lay groups who do not know the problem as we do, just as the Army was not hamstrung by people who did not know how to fight.

Report of the Committee on Nursing Needs of Rural Communities

Mrs. Charles W. Sewell, Chairman, and Charles W. Holman, Co-Chairman: There is a shortage of nurses, and classes for schools of nursing this fall have enrolled little more than half of the number required. With a desire to improve this situation the Committee on Nursing Needs in Rural Communities makes the following recommendations:

1. Education for later life must begin in the home, where attitudes toward real service to humanity must be developed.

2. Expansion of home nursing courses in high schools and adult education courses should be encouraged. This not only helps individuals to help themselves in time of need but is a means of recruiting students for schools of nursing.

3. Education for nurses should utilize hospital service as far as this service is educational. Such programs might well be augmented by the use of public funds. On the basis of the experience of the Cadet Nurse Corps, the course might be shortened and consideration given to student nurses being assigned to rural hospitals for part of their experience.

4. Practical nurses are urgently needed. This health worker too should be trained and licensed for the protection of the patient.

5. Improve the status of nurses in rural communities in regard to working conditions, professional recognition, opportunity for advancement and continued professional development.

6. Give compensation commensurate with the education required and the quality of service given.

7. The rural people who pay for and use nursing services working with the nurses in local communities can do much to improve the situation. It will take the combined efforts of rural people through their organizations and the professional association of physicians and nurses to solve these problems.

DISCUSSION

Mr. Graham L. Davis, Michigan: In Michigan we think there should be two types—the registered nurse and the practical nurse, or nurse's aide. We can't recruit them under present conditions, so the approach we're making is through our state department of education. Our state universities and colleges have a definite responsibility in that field. So we're working toward these nurses being registered as students at the university and then using the hospitals, even the small units, for practical experience, but they're students at the university. In that way we shall introduce these nurses to our smaller hospitals and perhaps solve this problem of adequate nursing service for the communities that we have.

Dr. G. F. Moench, Michigan: As a representative of the Health Committee and of the National Congress of Parents and Teachers I want to call attention to a problem that we run into when trying to develop our program, shortage of personnel and shortage of facilities. I have worked in a rural community all my life. These problems must be solved as a local problem as well as on a state and national basis. There are local resources at our command in every little community if we'll just look around. There are more millions of people represented in some 30,000 units of the Parents and Teachers Association; and in these communities there are schools. The school house furnishes a meeting place for people. Don't forget that the Parent-Teachers Association can be a valuable resource when it comes to working out programs.

Dr. W. L. Burnap, Fergus Falls, Minn.: I have a different view on the nursing problem than that presented. The lack of registered nurses presents a problem dangerous to the hospitals and physicians and the people. The girls are not entering nursing courses, and there are several reasons. One, the ease with which girls from high school can secure employment. There is poor pay for well trained nurses. This situation is the result of the war economy and will adjust itself. The chief cause, we in the rural areas feel, is the unnecessary demands made on the girls by the courses offered in a city hospital. Some years ago there were three year nurse training courses in many of our rural hospitals, two years at home and one in the city hospital. This arrangement provided adequate nurses in adequate supply. This desirable arrangement was arbitrarily terminated by some authorities at the top. There are two reasons why the rural hospitals are successful. The courses are so arranged that the girls can earn their own way. The present plan for licensing nurse's aides might help some but does not solve a real need for registered nurses. There is a solution. Establish a nurse training course in rural hospitals with affiliation with city hospitals. This plan has succeeded and is now succeeding where given the chance.

Report of the Committee on Health Council as Agency for Promoting Rural Health

Dr. J. Paul Jones: This committee believes that a health council should be composed of representatives from three groups: (1) those allied and auxiliary professional groups who render health service, (2) those who receive health services and (3) those governmental agencies officially concerned with health and medical care and also including those voluntary agencies manifesting a continuing interest in health and medical care.

Objectives of Health Council

1. To bring together medical and allied professional and citizen groups to the end that discussion, debate and interchange of opinions and planning of health and medical care may be effected.

2. To encourage, stimulate, foster and support the establishment of health and medical care councils in areas as deemed advisable within each state.

Functions of Health Council

1. To survey medical care and health needs.

2. To determine the existing and needed facilities and personnel for meeting the findings of the survey.

3. To recommend ways and means of providing adequate facilities and personnel to meet the constantly changing needs.

4. To disseminate as widely as possible information pertaining to health and medical care problems and programs.

5. To conduct or promote such meetings as may be helpful in effectuating the program.

This committee recommends that the Rural Health Committee, through the Council on Medical Service of the American Medical Association, provide cooperative assistance to interested state and local groups in establishing health councils.

J. Paul Jones, M.D., Chairman.
Lloyd C. Halverson, Co-Chairman.
Frank Peck.
Miss Winona Darrah, R.N.
V. V. Mitchell.

DISCUSSION

Miss Helen Becker, College of Agriculture, Nebraska: The existing agricultural agencies on the state and local level actually bring to the people education of a health nature. The existing facilities to which I have reference are the land grant colleges through the extension service. In Nebraska we have already done a great deal. The Nebraska State Health Planning Committee, which is actually a health council on the state level, brings together the best thinking of the state university college of medicine, the state department of health representatives from the organizations such as have been mentioned and others. Through this committee we disseminate information through the extension services, the 4-H Club and the women's project clubs. In the next two weeks I shall go on seven community health institutes—one day institutes—in the state of Nebraska. I believe that, because we have some 5,000 county agents in the United States, all states may use these facilities to great advantage.

Dr. Charles R. Henry, Little Rock, Ark.: In Arkansas in developing our prepayment health program we consulted with the leaders in the farm bureaus, the FSA and the extension service of the University of Arkansas. The extension service and the farm bureau in Arkansas have been studying ways of bringing better health to the rural communities. Last summer the director of the extension service called a meeting of doctors, dentists, hospital administrators, community leaders, public health workers and others. This group eventually will develop into our state health council. The group recommended that a health specialist be employed by the extension service to provide leadership in the communities in the development of a rural health program. This health specialist has been working since last October and conducts such institutes as Miss Becker says they are conducting in Nebraska. This health specialist interprets to the various groups and organizations Public Law 725. He interprets to community leaders and the people of these institutes prepayment health programs and also the existing health facilities in the community. He points out the need for rural boys and girls entering the health field and, above all, community responsibility in utilizing the facilities that are available. In Arkansas we have already completed the health and hospital survey.

Mr. Albert S. Goss, National Grange, Washington, D. C.: It is important that the American Medical Association has brought these groups together. I think the same thing can be done on a county level. I worked with farmers for thirty-five years. Much of it was in the field of insurance. Farmers do not want poor insurance, or poor or unpractical health programs; if competent medical men will participate in these county councils and state councils, the doctors need not have any fear of the kind of program which will develop. The reports of this committee and of committee two for setting up these county councils are the answer; and if we actually want the county councils in the spirit we have here, I have no doubt the whole field of prepayment of medical service will be advanced and these differences which have been expressed today will disappear.

Miss Eleanor Palmquist, R.N., Washington, D. C.: The Joint Committee on Community Nursing Service has prepared a guide that I think will be of help in your local councils in considering the nursing problems. This pamphlet can be secured from the Joint Committee on Community Nursing Service, 1790 Broadway, New York 19.

Mr. John H. Davis, Washington, D. C.: I represent the National Council of Farm Cooperatives. I want to endorse everything Mr. Goss has said and the others who have spoken for the county council. I think we need them rather soon. When the farmers of the country begin to demand something new as they are now, something better in the case of health and medicine, it is easy to look on that as an attempt to take over. Actually I think it is very different; it is a challenge to do a better job. If we succeed in bringing to those people something better, the end result will be more and better jobs to the medical people.

DR. W. E. GARNETT, Virginia: In Virginia we have had for years the state council, which has something over forty statewide organizations supporting it. We have sponsored and conducted a study of rural medical care needs. We have under way an intensive study of the insurance needs from the rural point of view. The important thing that we have found through this council is a very intensive educational campaign with meetings in communities over the state and circulars widely distributed. We are hoping to move to the county level shortly.

MR. EDGAR A. SHULER, Michigan State College: I think one of the basic problems is an educational problem. Dr. Hoffer at Michigan State College has prepared a report on this work that he has been doing for the past year, which I think might be of interest to you. This schedule or questionnaire attempts to help farm people know when they are in need of medical attention. It doesn't attempt to diagnose the condition, but it does attempt to point out that often we need to go to a doctor early before we're flat on our backs.

DR. CHARLES H. LERRIGO, Topeka, Kan.: I am a physician who has been in Kansas for forty-seven years, seventeen of which were spent almost entirely in rural practice. No one seems to have recognized the great help that will come to you from the tuberculosis and health associations. I suggest that you call in your tuberculosis and health associations as representatives at all your councils. They can give you a lot of health literature. They will provide health education circulars.

FATHER E. D. BUTT, Tennessee: I am rather surprised that nothing has been mentioned about using the churches as a means of disseminating information. In a rural church of which I was pastor in Tennessee we had a rack for pamphlets relating to the Christian life, such as one finds in all churches. Also in this rack we put pamphlets which we got from the county health departments. By having these available in the church we were disseminating them among people who never have got these pamphlets from the health department. As one who has spent most of twenty years in the rural pastorate, this conference is to me one of the most uplifting experiences that I have had recently. I think that on every state or national or county health conference there should be a competent delegation from the churches and that news about this conference, about the plans of this conference, should be put into the hands of every rural pastor of every denomination of every church.

Report of the Committee on Medical Care for Lower Income Groups

MR. OWEN COOPER, Jackson, Miss.: The findings of this committee are based largely on the discussion yesterday by a distinguished group of men who joined this round table. The group met to discuss the medical needs of lower income farm groups. Medical care was defined as preventive, diagnostic and curative services. Lower income groups were defined as those unable to pay the full cost of complete medical care. This broad definition led to difficulty later in determining the means by which such a group might best provide itself with medical care. The following methods and factors were discussed as ways medical care is now extended to the lower income group: 1. Sliding scale of fees whereby physicians adjust their fees in accordance with the patient's ability to pay. 2. Prepayment medical care plans. 3. Tax supported systems for the care of the indigent. 4. Philanthropic and other private agencies. Following discussion of the factors enumerated the group acting as a committee of the whole made the following recommendations: 1. Expansion and increased effectiveness of state and locally supported public health programs, implemented when necessary by federal funds. 2. Expansion and improvement of tax supported systems providing adequate medical care for the indigent and medically indigent. 3. Development of prepayment plans as a contributing factor in the solution of the problem. 4. That there should be no difference in the standards or adequacies of medical care regardless of the income of the patient. The committee makes the following suggestions based on the discussion which was not solidified into definite recommendations:

1. That the health of this lower income group depends in a large part on economic factors such as the provision of adequate housing, adequate clothing and adequate food, and that the correction of this defect depends on the raising and maintaining of the economic level of this group.

2. The committee calls attention to the fact that the definition of the lower income group as given by the conference would probably include about 85 per cent of the population.

3. That a comprehensive study be made of the effective medical care tax supported plans now in operation.

4. That cooperative health associations be expanded and developed on a community level to meet local problems.

5. We believe the issue now facing us is the choice between a system based on voluntary plans supplemented by tax subsidy, applied to the individual, involving a means test, or the adoption of a national personal health service program, supported by taxation. (This may mean income tax, pay roll deduction, or other personal assessment, combined if necessary with some general tax funds.)

OWEN COOPER, Chairman.
EDWARD MERTZ, Co-Chairman.
MISS ELIN ANDERSON.
CLYDE YORK.
NORMAN SCOTT, M.D.
COMMITTEE.

DISCUSSION

MR. W. E. GARNETT, Virginia: As a representative of the Virginia Agricultural Experiment Station, a few years ago I made an intensive study of this question. In many states the extension service reaches relatively few. I want to emphasize the importance of following up the report of this committee as well as of the committee on prepayment medical care. We found that the poor group averaged more than a third more children than an equal number of families of higher standards and that much of the future population of the country is being reared in these poor homes, where there is only inadequate medical care. We have found that this group needs better medical care than most and are least able to provide it.

REV. ANTHONY J. ADAMS, Rural Life Director, Institute of Social Order, St. Louis: The farm organizations for the most part have their health programs, and they have met opposition on the part of the state health boards. I have in mind a number of instances where the people have the committee, they have a couple of doctors on the board, they had nurses, they were prepared to start a cooperative hospital. They sent in their petition. They got no word for several weeks. They finally got their check back and a note saying that the state legislature could not permit a cooperative group to set up a hospital. The directive had to come immediately from the association—the medical association—which stymied the whole thing. The Catholic priest who was pastor in that town, the Methodist minister with his group, the local doctors and nurses had all worked on that. A central committee could iron out some of those difficulties. While I endorse this idea of a central committee, let us use it to strengthen our local committee. The more we centralize control the more likely we are to end up with socialized medicine. We'll fight to the last ditch with the American Medical Association in trying to forestall socialized medicine; but we want to see that cooperation in fostering local groups who are willing to help, who can give the help and who will give the help if they are permitted.

DR. F. S. CROCKETT, Chairman, Committee on Rural Medical Service, American Medical Association: On the national level here we can plan; but to get action it must go out into the states and counties. For that reason we have asked each state medical society to appoint a state committee on rural health; and some thirty-five or thirty-six have done that; and many of them have sent delegates to this meeting. It is expected that within each state that committee will get into close cooperation with the organized farm groups of that state.

None of us know the answer to these things. We are trying to find them out, and we will probably find them in the hard way. We look forward eventually to success.

Mr. Goss speaks of a National Council of Rural Health. Tonight when my committee meets I can take that up with them and see what we can do with the idea. I am very grateful to Mr. Goss for making that suggestion.

Following the end of the formal program I want the doctors who are here from every state, members of all local state committees on medical service, or other doctors who were sent probably to represent that interest, to talk over among ourselves what we can do and what we might be able to do in the states and in the smaller subdivisions of those states. We're impressed with the fact that so many from many different walks of life are interested in this problem. I am grateful to you who have expressed your views.

Address of J. Melville Broughton, Ex-Governor of North Carolina

Dr. Crockett then announced that Ex-Governor J. Melville Broughton of North Carolina could not be present. However, he sent an abstract of his talk, and Dr. George F. Lull, Secretary and General Manager, American Medical Association, read the address.

Dr. Lull: At the request of your chairman I will read this abstract of Mr. Broughton's address.

The good health of our citizens is a state and national responsibility. Any program for our national economy that omits health as an essential factor is unbalanced and unsound. The most important "next step in a health program" is to obtain general acceptance of these and related principles by state and national legislative bodies and by the public. Good health is not only a vital part of our national economy; it is our first line of national defense.

These factors were responsible for the passage of the Hill-Burton Federal Hospital Construction Act in July 1946. It is the first time any federal appropriation has ever been made for civilian hospital construction wholly under state or community management and control. It may well mark the beginning of a new era for good health in America.

Doctors and medical associations who have, with justification, opposed "socialized medicine" or "federalized medicine" have with almost complete unanimity accepted the principles and provisions of the Hill-Burton Act. Thus has been laid the foundation for a broad program for good health. Among other steps which should ensue may be the following:

1. The provisions of the Hill-Burton Act should be broadened and appropriations increased in a manner to make certain that full benefits will be experienced by rural areas.

2. Public schools should be required by state laws to give adequate instruction in health and personal hygiene and in home and community health and sanitation. Such instruction should extend to elementary, grammar and high school grades. The selection of textbooks for such instruction should not be left to politicians or even wholly to teacher-boards or commissions. State or other competent health authorities should participate in such selection.

3. Every child in a public school should be physically examined annually by a competent physician at public expense. Where such examination reveals the need for medical or surgical treatment, the parents should be notified. Where poverty or inadequate income prevents the parents from obtaining needed treatment for the child, it should be provided at public expense. In such programs the principle of individual selection or designation of physician or surgeon should be preserved. The fullest cooperation of medical groups in the instructional and clinical phases of the program should be invited and will undoubtedly be given.

4. State legislative bodies should make adequate appropriation for adequate medical care and hospital programs, with full provision for all rural areas and other sections not now adequately served. Appropriations so conditioned as to be unavailable to rural or other areas unable to provide a pro rata contribution, by tax or otherwise, will not solve the health problem. State legislation should be so designed as to take full advantage of the provisions of the Hill-Burton Act and other similar federal enactments.

5. In such a broad health program there can be no place for racial, religious or other discrimination.

6. The widest encouragement should be given to so-called Blue Cross hospital and medical care plans and similar agencies in various industrial groups. Such plans or agencies when adequately regulated and supervised in the public interest are a protection and at the same time encourage thrift and self reliance.

7. The word "indigent" or "charity" should be eliminated from the good health program. It carries something of a stigma that tends to keep away many people who should have the benefit of hospital care.

8. Increasing emphasis must be made on local responsibility and opportunity. The time for looking to Washington for the solution of all our problems is past. The relationship between nation, state and community should be one of cooperation and coordination. No community without a hospital or health center should think of any other form of memorial for the war heroes.

9. The shortage of physicians in rural areas threatens our whole standard of health in the nation. Inducements, gratuities, scholarships and the like may help some, but ultimately the only solution will be more hospitals and health centers in rural areas.

Comment by Mr. Watson Miller

Dr. Crockett then introduced Mr. Watson Miller, Washington, D. C., administrator of the Federal Security Agency, who said: It so happens that for about two decades I have been on the threshold of medicine. I have been the beneficiary of an unusual amount of skilful surgery, medical treatment, dentistry and effective nursing. I have had sense enough not to try to invade the profession and not prescribe for other people or myself. I am very zealous for American medicine. I shall never consciously do anything to delay it or harm it. On the business of health in rural communities, I don't think that differs in any important aspect from what we are all considering—just more medicine for more people.

Maladjustment in Medical Service

Dr. H. H. Shoulders, President, American Medical Association: There are many causes or factors which play a part in bringing about the state of maladjustment in individuals and in the conditions with which we are concerned today. Obviously it is not a specific disease for which a specific remedy is available—a single remedy which could be administered with assurances of a certain and speedy cure. It is therefore appropriate for us to think for a moment on a few of the causes which have contributed to the state of maladjustment which exists in medical service. All I can hope to do at this time is to contribute a few thoughts to the thinking that is going on and the questions that are being raised at this conference. I certainly do not hope to give you a specific remedy, for the simple reason that no such remedy exists. It is a situation which must be dealt with symptomatically. Many different means may be required in the management of the situation. At one time it may require sedation of various sorts and at another time it may require stimulation of various sorts.

One of the causes of our problem is illustrated by a story I heard from a reliable source some time ago. It is about a country doctor who was located at a country crossroads in one of the states in the Middle West. He was happy there and busy, but the roads over which he traveled on horseback or by buggy became paved roads. The farmers bought cars and so did he. In a short while he was not busy. He discovered that his patients were going to the town a few miles away for their medical care. He then posted a notice on his office door that he was going to town. The people in the community made a loud protest. His reply to their protest was that many of them were going to town for medical care, since the roads had been improved, and that they were calling him only at night or in emergencies or when the snow was too deep for the town doctor to visit them. This fact they could not deny. He did move to town and the people of that community became his patients again and he served them from and in the town.

This story could be repeated times without number, and this is one of the causes of the maladjustment we have at the present time. It is a cause also for the sense of maladjustment where no serious maladjustment exists, for the simple reason that the convenience of medical care often receives more emphasis in the minds of some people than the efficiency of medical care.

Another factor of great importance is the progress that has been made by science and invention. The whole pattern of rural life has changed, and the whole pattern of medical care has changed also, owing to science and invention.

The country doctor went on horseback or buggy. He often raised the feed for his horse. He carried most of his equipment with him. He was a good fellow, devoted, kind and generous and, I say, capable. I would not detract from his memory. I have respect, yes, reverence, for his memory. He was near the people and very successful. The sense of nearness was satisfying. They measured distance in miles then and not in minutes. But in all this I must not forget and you must not forget that the country doctor of whom I speak could not prevent or cure typhoid. He visited his patient daily for a period of six to eight weeks, and the mortality was high in spite of all he could do. He could not prevent or cure diphtheria. He had a fracture case occasionally, and he set fractures of arms and legs without the aid of an x-ray. He got many bad results but was not blamed for them. He did the best he could. Today he would be sued for malpractice if he gave the same treatment with the same results, not only that but the people themselves would not stand for it. Today the doctor cannot carry all his equipment with him. A diagnosis may involve many laboratory tests. He travels by automobile and can reach a point 10 miles from his office in less time than he could travel 2 miles on a country road. At that time a woman in labor was sent to the hospital occasionally for a complication. Today it is the rule for women in normal labor to go to the hospital.

Years ago many doctors in towns throughout the country built their own hospitals, equipped them and operated them as private institutions. They did two jobs, furnishing both medical care and hospital care. Many communities were slow to develop a sense of civic duty. They were not quick to develop facilities for their own interest and care. I could name many small institutions that have closed in the last ten to fifteen years.

The pattern of medical practice has changed in another important way. The diseases that required most of the time and interest of the rural practitioner many years ago have disappeared. You rarely see a case of typhoid now, but, on the other hand, fractured arms, legs and backs from automobile accidents occur with increasing frequency. I noticed in the paper a few days ago that there were 100,000 deaths from accidents last year, to say nothing of the millions who were thus injured and survived. In addition to this, many diseases which were rarely ever recognized and treated in those years are recognized and treated effectively today, though the diagnosis and treatment involve the use of facilities and equipment and knowledge unknown to the doctor of early days.

So the location of a doctor at every crossroad in this country would not, in my opinion, solve the problem of efficient medical care. It is a good, well trained doctor, plus equipment and plus facilities which are reasonably accessible by modern methods of transportation which will make adequate and efficient care available. We must not allow our sense of convenience and our desire for convenience to impair our appreciation of efficiency.

This fact was impressed on me some months ago as a result of a conversation with a man I regard as a great farm leader, a man many of you know, Mr. J. Frank Porter, who was president of the Tennessee Farm Bureau until a short time ago. He and I were discussing this problem, and he remarked with great emphasis that the town of Williamsport, Tenn., was in urgent need of a doctor and he gave apparently logical reasons for the statement. At one time three doctors were there. One moved away, one died and the remaining doctor was getting old and feeble. Mr. Porter lives on a fine farm near the village of Williamsport. This town has a population of 112 people. It is surrounded by a thickly settled community in one of the best farming sections of middle Tennessee, and in one of the best counties in Tennessee, Maury County. It is just 12 miles from Columbia, the county seat, which is a town with more than 10,000 population. There are many fine doctors in the town of Columbia and a good hospital and a full time health unit. Mr. Porter has an office in the town of Columbia. A fine paved road connects the two towns, and he covers the distance between them in twenty minutes traveling at a moderate rate of speed. There are, of course, no modern facilities for medical care at Williamsport.

I think Mr. Porter gave a very natural and laudable expression of a community interest as well as a personal interest, but I don't doubt that his thinking was colored to some extent, at least, by the convenience and satisfaction of having a country doctor near at hand even though he patronized the doctors in Columbia and in Nashville when the occasion arose.

Another factor to be considered is that patients, even seriously ill patients, can be moved long distances with speed and comfort and receive better care at the end of their journey than they could have received at home in the old days. Modern inventions have produced modes of patient transport that are efficient, speedy and comfortable. The location of a country doctor at Williamsport would not, in my opinion, solve the medical problem of Williamsport. It would satisfy a sense of need but not supply a complete need regardless of the individual capabilities of the doctor.

This whole idea of allocation of funds was begun for the purpose of demonstrating to the people their benefits and with the idea that the aid could be withdrawn, once an effective demonstration had been conducted. Mind you, I do not recommend the abandonment of the full time health unit, but I must urge the abandonment of a policy which governs the allocation of funds. At frequent intervals we see reference made to the approximately twelve hundred thinly populated poor counties without a full time health service, and this fact is cited as a reason for more appropriations when it is in fact a reason for the alteration of a policy.

I will say also that any opinion to the effect that the people in a county or area without a full time health unit are for that reason without preventive medical services is a very erroneous opinion.

The fact is that, when science developed and perfected means for the prevention of several diseases by vaccination or inoculation, the private practitioners of medicine began their extensive use. I dare say that more preventive medicine of this type has been administered by private practitioners of medicine than by all other agencies combined. It was not the simple regulation which required children to present a certificate of successful vaccination on entering school that accomplished the control of smallpox in this country many years ago, it was the continuous preventive efforts on the part of the general practitioners of medicine.

I wish to make this further observation—that the two groups of people who, in my opinion, should work out the treatment of this maladjustment are at this conference table. They are the representatives of the medical profession and the representatives of the rural people. From this conference then should grow and develop a type of consideration and cooperation which will in time determine what the local needs are, their character and the amount. The matter of voluntary prepayment medical service and insurance plans, in my opinion, can serve a vital function in the financing of the major costs of medical care, and they can accomplish it without hardship on individuals and with the complete preservation of individual independence and without destroying, or even impairing, the vital relationship between patients and doctors. The voluntary hospital prepayment movement is accomplishing the same thing.

THE TAFT-SMITH-BALL-DONNELL NATIONAL HEALTH BILL

An Analysis Prepared by the Bureau of Legal Medicine and Legislation

A revision of the bill sponsored in the Seventy-Ninth Congress by Senators Taft, Ball and Smith was introduced in the Eightieth Congress on February 10 as S. 545, with Senator Donnell of Missouri as an additional sponsor. In general framework the new bill is similar to the earlier one. Its title, however, follows too closely the title of its predecessor and will need revision. It indicates, among other things, that the bill will promote and encourage medical research in the National Institute of Health and through grants-in-aid to the states. The provisions in the earlier bill that would have accomplished such a purpose have been eliminated from S. 545.

The new bill proposes, as did the one introduced in 1946, to enact a "National Health Act" and is pending in the Senate Committee on Labor and Public Welfare, of which Senator Taft of Ohio is chairman. Several changes noted in S. 545, as compared with the first bill, merit initial comment. In the pending bill it is provided that the administrator of the proposed National Health Agency must be "a doctor of medicine, licensed to practice in one or more of the states and who is outstanding in the field of medicine." In the initial bill the administrator was to be either (1) a doctor of medicine with at least eight years of experience in the commissioned corps of the Public Health Service or (2) a doctor of medicine licensed to practice medicine or surgery in one or more of the states, who has had at least five years of active practice and three years of experience in a responsible position in medical research, teaching or administration.

In the bill introduced in the Seventy-Ninth Congress the United States Public Health Service, acting through the Surgeon General, was designated as the administrative agency on the federal level in relation to state programs to provide medical and hospital care for families and individuals of low income. The present bill provides for the establishment in the proposed National Health Agency of an Office of Medical and Hospital Care Services to supervise the administration of state programs. As director of this office will be a doctor of medicine who has had at least five years of active medical practice and who is outstanding in the field of medicine.

A new section in S. 545 will authorize an appropriation of $3,000,000 to assist states in surveying the availability of existing medical, surgical and hospital care to persons unable to pay in full therefor. Another new section would authorize an annual appropriation of $10,000,000 to develop more effective means for the prevention and control of cancer. Other differences between the original bill and S. 545 will be reflected in the analysis that follows.

DECLARATION OF FINDINGS

The necessity for the enactment of S. 545 is predicated on this declaration of findings set forth in section 2: (*a*) that health and medical functions are widely scattered throughout many agencies in the federal government, with resultant confusion and duplication of effort; (*b*) that inadequacies exist in the distribution of public health services and of medical and dental services in the United States, with the result that some persons are unable to secure adequate health and medical services; (*c*) that it is the policy of the United States to aid the states, through consultative services and grants-in-aid, to make available medical, hospital, dental and public health services to every individual regardless of race or *economic* status, and (*d*) that it is the policy of the United States to make provision for voluntary deductions from the salary of federal employees of premiums directed by them to be paid to voluntary nonprofit health insurance funds.

NATIONAL HEALTH AGENCY

Title I of S. 545 proposes the creation in the executive branch of the government of an independent agency to be known as the National Health Agency, to be administered by a national health administrator, appointed by the President, by and with the advice and consent of the Senate. His salary will be $15,000.

Qualifications of Administrator.—The administrator will not be permitted to engage in any other business, vocation or employment. He must be a citizen of the United States and "a doctor of medicine licensed to practice in one or more of the states and who is outstanding in the field of medicine."

Purposes and Duties of Agency.—The agency will promote the general welfare of the people of the United States by aiding and fostering progress throughout the nation in the field of health and medicine and by centralizing in it the activities of the federal government relating to health.

It will be required to (1) encourage the development throughout the nation of health services and facilities; (2) advise and cooperate with other agencies and departments of the federal government and with state governments and agencies, and with private agencies functioning in the field of health; (3) collect and analyze statistics and make studies, investigations and reports on conditions, problems and needs in the field of health in the United States and in other countries, and disseminate and make available information in this field; (4) make reports and recommendations with respect to the most efficient policies and methods for the promotion of health and related services, and (5) carry out such specific duties as may be entrusted to it by the Congress and exercise general supervision over the agencies transferred to it. Under the original bill the agency would also have been required to make recommendations with respect to legislation and matters of administrative policy.

On this agency will be devolved the responsibility for federal governmental activities concerned with (1) the administration of funds appropriated as grants to states for medical and hospital care, dental care, hospital facilities and all other health activities; (2) the prevention of disease through water purification, sewage treatment and the elimination of lake and stream pollution, and promotion of research toward this end; (3) the promotion of maternal, prenatal and child care, and the study and dissemination of information on child growth, development and nutrition; (4) the protection of the national health by promoting purity, standard potency and truthful and informative labeling of foods, drugs and cosmetics; (5) the administration of the Hospital Survey and Construction Act of Aug. 18, 1946 (a responsibility that was not devolved on the agency by the initial bill), and (6) such related matters as shall aid the states and the people in the maintenance of adequate and efficient health facilities and otherwise promote the national health. The bill as printed devolves another responsibility on the agency, namely the training and rehabilitation of persons vocationally handicapped because of permanent disability with the objective of placing such persons in remunerative employment. It is understood that this provision appears in the bill by inadvertance and that this duty will be exercised, as at present, by the Federal Security Agency.

Transfer of Functions to Agency.—There will be transferred to the agency the following agencies, their functions, powers and duties: The United States Public Health Service, Saint Elizabeths Hospital and the Food and Drug Administration. There will also be transferred the functions and duties of the *Children's Bureau concerned with the administration of title V,* parts 1 and 2, of the Social Security Act and the functions and duties of the Division of Health Studies in the Bureau of Research and Statistics of the Social Security Administration. No power, function or duty exercised by the Army, the Navy or the Veterans Administration will be transferred to the agency, nor will the agency nor any constituent unit thereof be deemed to have been granted any power, function or duty other than those specifically transferred.

The director of the Bureau of the Budget will be directed to make a study of the activities of the other departments and agencies of the federal government to determine whether any of their activities relating to health, not specifically transferred, should be transferred to the agency. He will be required to complete such study and to submit a report of its result to the Congress by Dec. 31, 1947.

Units of Agency.—In the agency there will be the following constituent units: (1) the office of the Administrator; (2) the Public Health Service, which in turn will assume the administration of Saint Elizabeths Hospital and Freedmen's Hospital; (3) the Office of Medical and Hospital Care Services (a unit not provided for in the earlier bill); (4) the Office of Dental Care Services (a unit not proposed by the earlier bill); (5) the Office of Maternal and Child Health; (6) the Office of Health Statistics; (7) the Office of Food and Drug Administration, and (8) such other constituent units as the administrator finds necessary. The earlier bill also provided for an Office of Vocational Rehabilitation which is omitted from the pending bill. The organization of the Food and Drug Administration will remain unchanged except as it may conflict with the specific provisions of this bill.

The Surgeon General of the United States Public Health Service will be appointed as provided in section 204 of the Public Health Service Act. The heads of other constituent units of the agency will be appointed by the administrator.

Qualifications of Director of the Office of Medical and Hospital Care Services and of the Office of Dental Care Services.—The director of the Office of Medical and Hospital Care Services will be a doctor of medicine licensed to practice medicine in one or more of the states, who has had at least five years of active medical practice and who is outstanding in the field of medicine. The director of the Office of Dental Care Services will be a doctor of dental surgery who has had at least ten years of active practice and who is outstanding in the field of dentistry.

Advisory Council on Maternal and Child Care.—Within the Office of Maternal and Child Health there will be an Advisory Council on Maternal and Child Care to be appointed by the administrator. This council will advise and consult with the head of the office in the formulation and administration of the medical and technical activities of the office. It will be composed of eight members, at least three of whom shall be doctors of medicine and specialists in obstetrics or pediatrics. In the section relating to this advisory council a reference is made on page 10 of the bill, line 11, to the Surgeon General. This reference, it is understood, is a drafting error, and the term administrator should be substituted for the term Surgeon General.

Studies and Reports by Administrator.—The administrator will be required to submit to the Congress and to the President in writing annually a report giving an account of all moneys received and disbursed by him and the agency, describing the work done by the agency and making such recommendations as he may deem necessary for the effective performance of the duties and purposes of the agency.

A new provision will require the administrator to make a study of the organization and staffing of the agency and, within six months after the effective date of the act, report to the Congress his findings and recommendations for promoting the more efficient and effective operation of the agency. Such studies will cover all aspects of the organization and staffing of the agency and of its constituent units and will include (1) salaries, (2) the desirability of retaining or modifying the commissioned corps of the Public Health Service and (3) the desirability of establishing an Office of Health and Medical Research as a constituent unit of the agency.

Appropriations.—There will be authorized to be appropriated for the administrative expenses of the agency for each fiscal year such sum as may be necessary.

Effective Date of Title.—Title I of the bill will take effect July 1, 1947. The administrator, however, may be appointed by the President, and his appointment confirmed by the Senate, at any time after the enactment of the bill, but the appointment will not take effect until July 1, 1947.

PREVENTION AND CONTROL OF CANCER

The pending bill contains a new provision authorizing an annual appropriation of $10,000,000 to enable the Surgeon General of the Public Health Service to develop more effective measures for the prevention and control of cancer and to assist, through grants to states, counties, health districts and other political subdivisions of the states in establishing and maintaining adequate measures for the prevention and control of cancer.

MEDICAL SERVICE FOR LOW INCOME GROUPS

Title II of the bill would add a new title to the Public Health Service Act, title VII, to assist the states to provide general health, hospital and medical services for families and individuals with low incomes. The new title VII is in two parts, part A—Medical Care Survey, a provision not included in the earlier bill, and part B—Medical Care Services.

Medical Care Survey.—The apparent purpose of part A is to authorize an appropriation of $3,000,000 to assist states in making a statewide inventory of existing medical, hospital and surgical care preparatory to the formulation of a plan for extending such care as contemplated by part B. Before a state may receive financial aid under part A, an application must be filed with and approved by the director of the Office of Medical and Hospital Care Services. This application must (1) designate a single state agency as the sole agency for making the survey, (2) provide for the designation of a state advisory council to include representatives of nongovernmental organizations or groups, and of state agencies concerned with the provision of medical or hospital care services, including representatives of the users of such services, selected from among persons familiar with the need for such services in urban or rural areas, to consult with the state agency in carrying out the survey, (3) provide for making an inventory and survey and for developing a program in accordance with part B, and (4) provide that the state agency will make such reports as the director may from time to time reasonably require.

Allotments for Surveys and Planning.—On approval of an application, a state will be entitled to receive an allotment of such proportion of any appropriation made available for surveys and planning as its population bears to the population of all the states. Within such allotment, it will be entitled to receive 33⅓ per cent of its expenditures incurred in making the survey and in the preparation of a plan. No allotment to any state will be less than $10,000.

Medical Care Services.—Part B will authorize an appropriation of $200,000,000 for each of five fiscal years to assist the states in providing general health, hospital and medical services for families and individuals with low income. During and after this five year period the Congress will review the program and determine the amount to be authorized thereafter.

State Plans.—Any state desiring to participate in this program may submit a plan to the director which must:

1. Designate a single state agency as the sole agency for the administration of the plan or designate such agency as the sole agency for supervising the administration of the plan, "providing that on or before 1949 such agency shall be the state health agency."

2. Provide for the designation by the governor of a state medical and hospital care advisory council, to include representatives of nongovernment organizations or groups, and of state agencies concerned with the administration or utilization of health, medical or hospital services, including representatives of state medical associations, state hospital associations, voluntary nonprofit prepaid hospital plans and voluntary nonprofit prepaid medical care plans, or other groups interested in

the improvement of medical and hospital services and in the better distribution thereof.

3. Contain satisfactory evidence that the state agency will have authority to carry out the plan.

4. Set forth a statewide program designed and calculated to provide, within five years, (*a*) hospital services, surgical services and medical services for all those families and individuals in the state having insufficient income to pay the whole cost of such, and (*b*) periodic physical examination for all children in elementary and secondary schools in the state. Such a program may, (1) at the option of the state, provide medical care services in institutions, in the home or in physicians' offices; (2) provide for the furnishing of such services to such families and individuals by means of payments in the nature of premiums or partial premiums or reimbursement of expenses or otherwise by the state, to any voluntary health, medical or hospital insurance fund, or other fund, operated not for profit, in behalf of those families and individuals unable to pay the whole cost of such services or insurance therefor; (3) include and take account of services rendered or to be rendered by governmental subdivisions of the state and by private organizations operating not for profit and may provide for the payment to such institutions by the state or subdivision for care to such families and individuals, and (4) include payments to physicians practicing in areas which, without such payments, would be unable to provide sufficient income to attract a practicing physician. The program must provide for the collection of proper charges of less than the total cost of such services from persons unable to pay in whole but able to pay in part therefor.

5. Describe the financial contribution for the support of the plan to be made by the state, its local subdivisions, and its private institutions, "which contributions shall be sufficient to carry out the program . . . at the end of said period of five years." The financial contribution made by the state and its governmental subdivisions must be at least equal to the amount contributed for similar purposes in the year 1946 and at least equal to the federal aid made available to the state under this legislation. There has been added to the pending bill a new provision to the effect that nothing in it shall "modify obligations assumed by the federal government under other statutes for the medical and hospital care of veterans." This would seem to mean that if a veteran is entitled to medical and hospital services at government expense and if such services are supplied through a state program, then the federal government will pay the full cost and not merely the percentage it normally would pay for services rendered under a state plan.

6. Set forth the relative need of the various proposals required to carry out the plan and provide for the proper priority between such proposals, based on such need, as financial resources become available.

7. Be based on a statewide inventory of existing medical, surgical and hospital care, including that provided by the state and by private organization and shall describe in detail the extension of such services to the end that they be furnished without discrimination on account of race, creed or color to all persons unable to pay in full therefor.

8. Provide that the state agency will make such reports as the director may from time to time reasonably require and afford to the director, on demand, access to the records on which the information is based.

9. Provide that the state agency will from time to time review its state plan and the operation thereof and submit to the director any modifications thereof which it considers necessary.

Approval of State Plans.—If a state plan fulfils the conditions specified in the preceding paragraphs, it must be approved by the director. If a plan is disapproved for failure to comply with the conditions named, the National Medical Care Council (erroneously referred to in the pending bill as the National Health Council) must, on the request of the state agency, afford it an opportunity for hearing.

No plan may be disapproved because the director disagrees with the methods proposed, if the program is designed and calculated by July 1, 1952 to provide hospital services, surgical services, medical services and periodic physical examinations at a cost within the probable financial resources of the state with federal aid. It is expressly provided that the state shall devise in each case *methods* by which this end is to be attained.

Allotments to States.—Each state with an approved plan will be entitled to an allotment for each fiscal year of a sum bearing the same ratio to total federal appropriation as the product of (*a*) the population of such state and (*b*) its percentage of tax-paying ability bears to the sum of the corresponding products for all the states having plans approved. The percentage of tax-paying ability of a state will be that percentage which bears the same ratio to 50 per cent as the per capita income of the continental United States (excluding Alaska) bears to the per capita income of such state, except that such percentage shall in no case be more than 66⅔ per cent or less than 25 per cent. Sums allotted to a state for a fiscal year and remaining unencumbered at the end of the year will remain available to the state for the next fiscal year.

Withholding of Allotments.—Allotments to a state may be discontinued with the approval of the administrator if the director, after reasonable notice and opportunity for hearing to the state agency, finds (1) that the state agency is not complying substantially with the provisions of the plan theretofore approved by the director or (2) that any federal funds have been diverted or (3) that the state and its governmental subdivisions have failed to provide toward the carrying out of the plan at least as much money as received from the federal government. A dissatisfied state whose allotments have been discontinued may appeal to the United States circuit court of appeals for the circuit in which the state is located. The findings of fact by the director, unless substantially contrary to the weight of evidence, will be conclusive. The court may, however, for good cause remand the case to the director to take further evidence.

Regulations; National Medical Care Council.—The director will be authorized to make such administrative rulings as he finds necessary, and in administering the title he will be required to consult with a National Medical Care Council (designated as the National Health Council in the initial bill), consisting of the director ex officio, who shall serve as chairman, and eight members appointed by the administrator. Five of the eight appointed members will be persons who are outstanding in the fields pertaining to medical and hospital care, and at least four of them must be doctors of medicine. The other three appointive members must be persons familiar with the needs for medical and hospital care in urban and rural areas. The council will be authorized to appoint such special and technical committees as may be useful in carrying out its functions. The council will meet as frequently as the administrator deems necessary, but not less than once each quarter. On the request of three or more members, it will be the duty of the administrator to call a meeting of the council.

Miscellaneous.—If the director believes that the purposes of this title would be promoted by a conference of representatives of state agencies, he may call such a conference. On the application of five or more such state agencies, it will be his duty to call a conference of representatives of all state agencies joining in the request. A conference of representatives of all such state agencies must be called annually by the director.

Except as otherwise specifically provided, nothing in this title may be construed as conferring on any federal officer or employee the right to exercise any supervision or control over the administration, personnel, maintenance or operation of the health services with respect to which any funds have been or may be expended under this title.

DENTAL HEALTH SERVICES

Title II of the bill would add another title to the Public Health Service Act, title VIII, proposing federal funds to assist the states to provide dental examination for school children and necessary dental care for those school children and other individuals and families unable to pay the whole cost of such care. As with the case of the title relating to medical services, title VIII is divided into two parts, part A, authorizing an appropriation of $1,000,000 to assist the states in making dental surveys, and part B, relating to state programs for extending dental care services under which there will be authorized to be appropriated for the fiscal year ending June 30, 1948 the sum of $8,000,000, for the fiscal year ending June 30, 1949 the sum of $12,000,000, for the fiscal year ending June 30, 1950 the sum of $16,000,000, and for each of the following fiscal years the sum of $20,000,000. Through what appears to be a drafting error, these dates in the pending bill are at variance with those just stated and must be corrected before action is taken on the bill.

For a state to take advantage of this title, it must submit plans to the director of Office of Dental Care Services for his approval. The requirements with respect to such plans parallel closely the requirements specified for plans for general medical services in that they must designate a single state administrative agency which "after 1949" must be the state health agency, provide for a dental health advisory council, describe the financial participation required from the state and its governmental subdivisions, and so on. One requirement is that a plan must set forth a statewide program designed and calculated within five years to provide for the periodic inspection of the teeth of all children in the elementary and secondary grades of public and nonpublic schools in the state and to provide for the dental care and treatment of dental diseases and dental defects, including prophylaxis, filling, x-ray, extraction and related care, other than straightening, of the teeth of those children in the elementary and secondary grades of public and nonpublic schools of the state, who, and whose family or guardian, have insufficient income to pay for the whole cost of the services. The program may at the option of the state provide dental care for those families and individuals in the state having income insufficient to pay the whole cost of such service.

DENTAL RESEARCH

The bill introduced in the Seventy-Ninth Congress contained provisions relating to research in the fields of general medical health, neuropsychiatry and dentistry. Title II of the pending bill would add another title to the Public Health Service Act, title IX, providing for dental research only. It would authorize an appropriation of a sum not to exceed $2,000,000 for the erection and equipment of an adequate building for the use of the proposed National Institute of Dental Research to be created as a division of the National Institute of Health. Additional appropriations would be authorized to further research in dental diseases and impairments and to establish scholarships in the field of dental health.

MISCELLANEOUS

Title III of the pending bill, after proposing certain technical amendments to existing laws, provides that on the direction of any officer or employee of the government of the United States, requesting the government to deduct from the salary of such employee a fixed sum or percentage to be paid to any voluntary health insurance fund, such sum or percentage shall be deducted from the salary and paid as directed by the employee or officer. The term "United States" is defined to mean all departments, bureaus, agencies and other divisions of the government and corporations the stock of which is wholly owned by the government. The term "health insurance fund" is defined to include any nonprofit organization undertaking to provide or to insure against the expense of hospital, medical, dental or other services connected with health.

This title also directs the Secretary of the Treasury, beginning with the fiscal year ending June 30, 1948, to deposit for each year in a special fund in the Treasury of the United States proceeds of taxes, duties, imposts or excises in an amount equal to the aggregate of the amounts authorized to be appropriated for such year under the bill. Amounts deposited in such fund will be available for expenditure only pursuant to appropriations made under authority of the legislation, and no moneys will be payable on any of said appropriations except from the fund. Any amounts remaining in the fund after the expiration of the period for which such amounts are available for expenditure will be covered into the general fund of the Treasury.

Official Notes

SECRETARY OF COUNCIL ON MEDICAL EDUCATION AND HOSPITALS APPOINTED

The Board of Trustees of the American Medical Association has appointed Dr. Donald G. Anderson of Boston as secretary of the Council on Medical Education and Hospitals, effective July 1, 1947. Dr. Anderson is dean of the Boston University School of Medicine. He is a graduate of Harvard College and received the M.D. degree from Columbia. He has had hospital and academic appointments at Boston City Hospital, Presbyterian Hospital in New York, Evans Memorial and Massachusetts Memorial Hospitals in Boston, and Columbia. During the war he was associated with Dr. Chester Keefer in penicillin research for the Office of Scientific Research and Development. His research publications deal primarily with the employment of the sulfonamide drugs, penicillin and streptomycin in the chemotherapy of infections.

Washington Letter

(From a Special Correspondent)

March 21, 1947.

Rest for President Truman on Advice of Physician

The President's brief vacation in Florida was taken on strict orders of his personal physician, Brig. Gen. Wallace H. Graham. General Graham said that Mr. Truman's health is "excellent and actually radiant. It's just that he's been going pretty hard lately and he needs a rest just like everybody else."

Proposal That Pentagon Be Used as a College for Veterans

Representative Lane, Massachusetts Democrat, has presented a bill to Congress advocating that the Pentagon Building be used as a university to train veterans for careers in peacetime. Mr. Lane pointed out that Governor Maurice J. Tobin of Massachusetts has authorized the use of an army camp as a state college for veterans. It has not been indicated whether medical subjects would be included.

Launching of Cancer Survey

The first complete cancer survey to be held in the District of Columbia has been launched and, when completed, a cancer program will be mapped out by the American Cancer Society. The U. S. Public Health Service will assist District of Columbia officials and the local cancer society. Dr. Harold Dorn, cancer statistician, National Cancer Institute, will direct the Washington survey.

Continuation of War on Rodents

Dr. George C. Ruhland, health officer for the District of Columbia, announced that the long continued effort to rid the nation's capital of rodent pests will be continued again this year. He told a delegation of complaining citizens that "there are not enough people in the employ of the District government to do all the work necessary to lessen the pest and rodent problems in Washington."

Veterans Administration Asks Condemnation of Hospital Site

Refusal by the owners of an $851,436 offer for the 25 acre Nevius tract in Arlington County, sought by the Veterans Administration as the site of a new $15,000,000 hospital, has prompted that agency to start condemnation proceedings. Work on the hospital will start in June, if the agency takes possession, and should be completed in eighteen months or two years.

Approval of Bill on Certification of Streptomycin

President Truman has signed a bill which requires federal inspection and certification of streptomycin.

Medical Legislation

STATE LEGISLATION

Arizona

Bill Passed.—H. 206 passed the house March 5. It proposes a law providing for the licensing, regulation and **inspection of hospitals** within the state.

Arkansas

Bill Passed.—S. 301 passed the senate March 3. It proposes that **any person desiring to be married** shall file a medical certificate from a duly licensed physician showing that the applicant has been given a physical examination and is not infected with syphilis in a stage of that disease which is or may become communicable to the marital partner.

California

Bill Introduced.—A. 2428, to amend the business and professions code, proposes, under certain circumstances, to authorize **licentiates of other states** to act as resident or assistant resident physician and surgeon in state hospitals for a period of not exceeding one year.

Colorado

Bill Introduced.—S. 453, to amend the law relating to the **practice of chiropody**, proposes to define the practice of chiropody as "the diagnosis and medical, surgical, mechanical, manipulative and electrical treatment of ailments of the human toe, foot and leg, excepting any amputation and excepting the administration of an anesthetic other than local." The proposal also defines the terms "toe, foot and leg," "amputation," "diagnosis," "medical treatment," "surgical treatment," "mechanical treatment," "manipulative treatment" and "electrical treatment."

Kansas

Bill Introduced.—H. 327 proposes the creation of a **naturopathic examining board** and defines naturopathy as "the prevention, diagnosis and treatment of human injuries, ailments and diseases by means of any one or more of the psychological, physical or mechanical, chemical or material forces or agencies of nature."

Maryland

Bill Passed.—H. 247 passed the house March 6. It proposes to prohibit certain types of **advertising by osteopaths**, chiropractors, physiotherapists and naturopaths.

New Hampshire

Bill Introduced.—H. 371 proposes the enactment of a hospital licensing law.

Bill Enacted.—H. 154 was approved March 4. It amends the law relating to **medical service corporations** by authorizing the agents of such corporations to be nonresidents of the state.

North Dakota

Bill Passed.—H. 52 passed the senate March 8. It proposes to amend the law relating to hospitals by setting up rules and regulations for the licensing of **maternity homes** and maternity hospitals.

Oregon

Bill Passed.—H. 7 passed the senate March 5. It proposes to require all physicians licensed by the state board of medical examiners to **report immediately to the local health officer** the name, sex, date of birth and address of every person diagnosed as a case of epilepsy or similar disorder characterized by momentary or prolonged lapses of consciousness or control, which is or may become chronic.

Pennsylvania

Bill Introduced.—H. 493 proposes the creation of a state **board of massage examiners** and defines massage as the art of body massage either by the hand or by mechanical apparatus, oil rubs, hot and cold packs, cabinet baths (excluding fever therapy), tub, shower, sitz and similar baths.

Texas

Bill Introduced.—H. 503 proposes the enactment of a state **hospital survey and construction act** requiring a statewide survey of hospital facilities and the preparation of a program for the construction of additional needed facilities. The proposal also requires the appointment of an advisory hospital council and the establishment of regulations for the purpose of obtaining federal funds to assist in survey and construction programs.

Vermont

Bill Passed.—H. 164 passed the house March 5. It proposes an appropriation for the continued maintenance of the Vermont **blood plasma bank.**

Washington

Bill Passed.—H. 378 passed the house March 3 and the senate March 8. It proposes to require applicants for a **license to practice medicine** and surgery to have graduated from a medical school accredited and approved by the Association of American *Medical Colleges* and the Council on Medical Education and Hospitals of the American Medical Association.

West Virginia

Bill Enacted.—S. 71 was approved March 5, 1947. It amends the law relating to medical and hospital service corporations by authorizing such corporations to **promote and encourage reciprocity** with similar plans both within and without the state.

Coming Medical Meetings

Alabama, Medical Association of the State of, Birmingham, April 14-16. Dr. Douglas L. Cannon, 519 Dexter Ave., Montgomery 4, Secretary.

American Association for the Study of Goiter, Atlanta, Ga., April 3-5. Dr. Thomas C. Davison, 478 Peachtree St., N. E., Atlanta 3, Secretary.

American Association of Anatomists, Montreal, Canada, April 3-5. Dr. Normand L. Hoerr, 2109 Adelbert Road, Cleveland 6, Secretary.

American Association of Industrial Physicians and Surgeons, Buffalo, N. Y., Statler Hotel, April 26-May 4. Dr. Frederick W. Slobe, 28 E. Jackson Blvd., Chicago 4, Secretary.

American College of Physicians, Chicago, April 28-May 2. Mr. E. R. Loveland, 4200 Pine St., Philadelphia 4, Secretary.

American Laryngological Association, St. Louis, April 23-24. Dr. Arthur W. Proetz, 12 Westmoreland Place, St. Louis 8, Secretary.

American Laryngological, Rhinological and Otological Society, St. Louis, April 25-26. Dr. C. Stewart Nash, 288 Alexander St., Rochester 7, N. Y., Secretary.

American Otological Society, St. Louis, April 21-22. Dr. Gordon D. Hoople, 713 E. Genesee St., Syracuse 2, N. Y., Secretary.

American Society for Clinical Investigation, Atlantic City, Chalfonte-Haddon Hall, May 5. Dr. Eugene A. Stead Jr., Grady Hospital, Atlanta 3, Georgia, Secretary.

American Society for Research in Psychosomatic Problems, Atlantic City, May 3-4. Dr. Edwin G. Zabriskie, 714 Madison Ave., New York 21, Secretary.

Arizona State Medical Association, Tucson, May 7-10. Dr. Frank J. Milloy, 112 N. Central Ave., Phoenix, Secretary.

Arkansas Medical Society, Little Rock, April 17-19. Dr. William R. Brooksher, 602 Garrison Ave., Fort Smith, Secretary.

Association of American Physicians, Atlantic City, May 6-7. Dr. Joseph T. Wearn, Lakeside Hospital, Cleveland 6, Secretary.

California Medical Association, Los Angeles, Hotel Biltmore, April 30-May 3. Dr. L. Henry Garland, 450 Sutter St., San Francisco 8, Secretary.

Connecticut State Medical Society, New Haven, April 28-30. Dr. Creighton Barker, 258 Church St., New Haven 10, Secretary.

Florida Medical Association, Miami, April 20-23. Dr. Robert B. McIver, P. O. Box 1018, Jacksonville, Secretary.

Georgia, Medical Association of, Augusta, Bon Air Hotel, April 22-25. Dr. Edgar D. Shanks, 478 Peachtree St. N. E., Atlanta, Secretary.

Hawaii Territorial Medical Association, Lihue, Kauai, May 1-4. Dr. Harry L. Arnold Jr., 510 S. Beretania St., Honolulu 53, Secretary.

Iowa State Medical Society, Des Moines, April 16-18. Dr. John C. Parsons, 406 Sixth Ave., Des Moines 9, Secretary.

Maryland, Medical and Chirurgical Faculty of, Baltimore, April 22-23. Dr. W. Houston Toulson, 1211 Cathedral St., Baltimore 29, Secretary.

Mississippi State Medical Association, Biloxi, May 6-8. Dr. T. M. Dye, Box 295, Clarksdale, Secretary.

Missouri State Medical Association, Kansas City, March 30-April 2. Mr. Thomas R. O'Brien, 634 N. Grand Blvd., St. Louis 3, Executive Secretary.

Nebraska State Medical Association, Omaha, April 28-May 1. Dr. R. B. Adams, 416 Federal Securities Bldg., Lincoln 8, Secretary.

New Jersey, Medical Society of, Atlantic City, Haddon Hall, April 22-24. Dr. Alfred Stahl, 160 Lincoln Ave., Newark 4, Secretary.

New Mexico Medical Society, Albuquerque, April 30-May 3. Dr. H. L. January, 221 West Central Ave., Albuquerque, Secretary.

New York, Medical Society of the State of, Buffalo, May 5-9. Dr. Walter P. Anderton, 292 Madison Avenue, New York 19, Secretary.

North Carolina, Medical Society of the State of, Virginia Beach, Va., Cavalier Hotel, May 12-14. Dr. Roscoe D. McMillan, P. O. Box 232, Red Springs, Secretary.

Northern Tri-State Medical Association, Detroit, April 8. Dr. John L. Stifel, 232 Michigan St., Toledo 2, Ohio, Secretary.

Ohio State Medical Association, Cleveland, May 6-8. Mr. Charles S. Nelson, 79 E. State St., Columbus 15, Executive Secretary.

Oklahoma State Medical Association, Tulsa, Mayo Hotel, May 14-16. Mr. R. H. Graham, 210 Plaza Court Bldg., Oklahoma City, Executive Secretary.

Southwest Allergy Forum, Shreveport, La., March 31-April 1. Dr. Sim Hulsey, 505 Medical Arts Bldg., Fort Worth, Texas, Secretary.

Tennessee State Medical Association, Memphis, April 8-10. Dr. W. M. Hardy, 706 Church St., Nashville 3, Secretary.

Texas, State Medical Association of, Dallas, Adolphus Hotel, May 5-8. Dr. Holman Taylor, 1404 W. El Paso St., Fort Worth 3, Secretary.

GOVERNMENT SERVICES

ARMY

BENEFITS TO MEDICAL DEPARTMENT OF PROPOSED LEGISLATION

The benefits to the Medical Department of the proposed legislation before Congress (H. R. 2536) on procurement, promotion and elimination of Regular Army officers are outlined in the following statement issued by the Surgeon General's Office:

The bill provides that section 10 of the National Defense Act be amended to read "The Medical Department shall consist of Surgeon General with the rank of major general, four assistants with the rank of brigadier general, one of whom shall be an officers of the Dental Corps" is amended to read "The Medical Department shall consist of one Surgeon General with the rank of major general, one assistant with the rank of major general who shall be an officer assigned to the Dental Corps, and three assistants with the rank of major general or brigadier general as determined by the Secretary of War."

The bill authorizes a strength of active permanent general officers of the Regular Army in the Medical Corps equal to ¾ of 1 per cent of the authorized active commissioned strength of the Medical Corps of the Regular Army. Of a total authorized strength of active general officers there is authorized 50 per cent in the grade of major general and 50 per cent in the grade of brigadier general.

It provides for promotion lists in the Medical Department as follows: The Medical Corps Promotion List, the Dental Corps Promotion List, the Veterinary Corps Promotion List and the Medical Service Corps Promotion List. Of the total authorized promotion list strength for the entire army there is authorized 8 per cent in the grade of colonel, 14 per cent in the grade of lieutenant colonel, 19 per cent in the grade of major, 23 per cent in the grade of captain, 18 per cent in the grade of first lieutenant and 18 per cent in the grade of second lieutenant. The authorized number in each of the several grades in each of the several promotion lists is to be prescribed by the Secretary of War by a schedule of percentages in grades for that list, which schedule of percentages may be different for each promotion list. However, a saving clause provides that, irrespective of any vacancy in any grade, except general officers and colonels, whenever an officer whose name is carried on any recommended list under provision of this section completes for promotion purposes the prescribed number of years in the grade of first lieutenant, captain and major, the authorized number of officers in the grade of captain, major and lieutenant colonel respectively in the applicable promotion list shall be temporarily increased, if necessary, to authorize the appointment in that grade of such officer and all officers of his grade and promotion list whose names appear above his on the recommended list, and such officers shall be simultaneously appointed in that grade retaining among themselves their existing relative seniority. Until Dec. 31, 1947 initial appointments and promotions shall continue to be made in accordance with the present provisions of the integration and other laws but effective Dec. 31, 1947 no further appointments shall be made except under the provisions of this bill. The bill provides for promotion by selection to all grades to fill existing vacancies. However, irrespective of the existence of any vacancies promotion list officers of the line of the Army may be selected for promotion to the grade of first lieutenant, captain, major and lieutenant colonel on the completion of three years' service, seven years' service, fourteen years' service and twenty-one years' service. However, for the Medical Department each person appointed as an officer of the Regular Army shall at the time of appointment be credited with the amount of service equal to four years for the Medical Corps, three years for the Dental Corps and two years for the Veterinary Corps, which means that an officer in the Medical Corps appointed as a first lieutenant will be promoted to the grade of captain on the completion of three years' service, to the grade of major on the completion of ten years' service and to the grade of lieutenant colonel on the completion of seventeen years' service and is eligible for selection to the grade of colonel on the completion of eighteen years' service if vacancies do not occur in the respective grade at an earlier date. Therefore, effective Dec. 31, 1947 each officer of the Medical Corps who on that date has less than four years' service credit, each officer of the Dental Corps who has less than three years' service and each officer of the Veterinary Corps who has less than two years's service shall be credited for promotion purposes with four years', three years' and two years' service respectively.

Since the integration laws known as Public Laws 281 and 670, 79th Congress, permitted credit for appointment purposes to officers of the Medical Department equal to the difference between their age at the time of appointment and the age of 25 years an inequity was created for officers of the Medical Department of the Regular Army whose average age at the time of original appointment was $28\frac{5}{12}$ years. In order to overcome this inequity and place all officers of the Medical Department on equal footing so far as age in grade is concerned, the bill provides for the granting of credit to officers of the Medical Department commissioned between June 27, 1926 and Dec. 28, 1945 and who had continuous active commissioned service in the Regular Army since such appointment. Effective Dec. 28, 1945 such officers are credited respectively with additional years of service as follows: Medical Corps $3\frac{5}{12}$ years, Dental Corps $3\frac{1}{12}$ years and Veterinary Corps $1\frac{4}{12}$ years. The service credited shall be counted for promotion and permanent seniority purposes only. No change, however, will occur in the relative permanent seniority standing of any officer who held a commission in any of these corps on Dec. 28, 1945.

The bill provides that on July 1, 1948 or at the earliest practicable date thereafter Regular Army officers shall be promoted and appointed in the grades of first lieutenant, captain, major and lieutenant colonel to fill initial requirements which exist in those respective grades. In the case of all Medical Department Promotion Lists, owing to the present reduced strength of the various corps there now exists a number of vacancies, which means that officers at present in the various corps of the Medical Department, those being integrated and the ones to come into the service after Dec. 31, 1947 may look forward to more rapid promotion than has ever heretofore existed in the Medical Department of the Army.

In addition to promotion to permanent grades in the Regular Army, the bill provides for promotion to temporary rank whenever the number of permanent appointments in the grades of colonel, lieutenant colonel, major, captain and first lieutenant respectively is less than the number authorized in these grades in such promotion list.

The bill provides that from time to time officers of the reserve components of the United States Army may with their own consent be ordered to active federal duty for such length of time as the President may prescribe and that when the total number of officers serving on active duty, Regular Army, and all officers of the Army of the United States of any component exceeds the authorized active commissioned strength of the Regular Army the Secretary of War shall determine the requirements in each of the several grades, and temporary promotions are authorized for officers of these components to fill these requirements.

It is anticipated that there will exist in the Medical Department of the Regular Army 1,900 vacancies in the Medical Corps, 370 vacancies in the Dental Corps, 10 vacancies in the Veterinary Corps and 440 vacancies in the Medical Service Corps.

Even though all these vacancies in the Medical Department of the Regular Army could be filled there will still be needed several thousand reserve component officers on active duty to meet the requirements in each and every corps of the Medical Department to fulfil the needs of the anticipated strength of the interim army.

EMPLOYMENT OF A. S. T. P. GRADUATES BY THE ARMY

Approximately 12,000 medical officers received at least part of their training under the Army Specialized Training Reserve Program. Of this number 4,000 have served with the Army and have been separated, 5,000 remain on active duty and 3,000 are currently completing their internships. All the latter may expect to serve for two years, whether or not some of them are deferred for additional hospital training.

During the war the 9-9-9 house officership program provided the Army with a certain proportion of men having some advanced training. All 9,000 physicians who have served or are now serving received a nine months internship, 3,000 had eighteen months of hospital work and 1,500 were deferred for a total of twenty-seven months of house officer training. In general, officers with this additional training were assigned to duties carrying greater professional responsibilities.

The drastic reduction in army strength (from 8,300,000 to 1,300,000) and in patient load (from 365,000 to 55,000) permitted a decrease in medical officers from 48,000 to 6,400, of which 5,000 are A. S. T. P. graduates. Man for man replacements or rotation of the present medical officers cannot be effected by employing entirely physicians who have had only nine months of internship. Replacement needs are such as to require some men with longer training than nine months of internship. The task of caring for the Army's 55,000 patients is such that men with nine months of internship cannot automatically replace an equal number of men now in service.

Therefore, plans were made which were aimed to provide the Army with a number of men having more than the minimum of intern training by July of 1948 by the deferment program announced in December (THE JOURNAL, Dec. 21, 1946, p. 1017). The entire 3,000 A. S. T. P. interns were allowed to continue their hospital services until July 1, 1947. This adjustment had nothing to do with army needs; it was made to integrate internships with the decelerated medical school curriculum.

Further deferment for additional training was projected for half of these interns, as was done throughout the war under the 9-9-9 program. Interns numbering 1,200 were to be permitted an additional six months of training (to Jan. 1, 1948) and 300 an additional twelve months (to July 1, 1948). The latter group of 300, taking their additional training in medical school hospitals, was especially needed as replacements for D specialists.

Although the deadline for making these deferments was March 1, 1947, there were only 650 applications for deferment by this date. Of these, 350 have been deferred six months and 300 for one year.

The program was attempted to provide the Army with the medical officers it needs for assignments requiring previous hospital training of different durations. All the 3,000 A. S. T. P. men now in internships may anticipate two years of army service, including terminal leave, whether or not they are deferred.

INSECTS SURVIVE FLIGHT INTO THE IONOSPHERE

Living organisms have survived the penetration of the ionosphere in the war head of a captured German V-2 rocket fired from White Sands, N. M., the War Department has announced. Fruit flies, included in containers which held instruments and cameras installed by the Army Air Forces, have been recovered alive and seemingly none the worse for the experience.

The effect on the insects of the flight at supersonic speeds, along with the exposure to the heat and cosmic radiations of upper air regions, were part of experiments conducted by AAF technicians and civilian scientists.

The flies were placed aboard the rocket by researchers from the University of New Mexico. The last V-2 reached an altitude of more than 360,000 feet, the highest altitude attained by a living thing from the earth's surface.

The descent of the container took about an hour from the time it was ejected from the rocket at the apex of the missile's flight.

ARMY AWARDS AND COMMENDATIONS

Colonel Paul H. Streit

The Legion of Merit and later the Oak Leaf Cluster were recently awarded to Col. Paul H. Streit, now at Brooke General Hospital, Fort Sam Houston, Texas. The citations read in part as follows: For exceptionally meritorious conduct in the performance of outstanding service from June 21, 1942 to May 1, 1945. As commanding officer of a general hospital, Colonel Streit greatly increased its capacity, while his adoption of occupational therapy on a large scale aided materially in the rapid recovery and reconditioning of casualties. Later, as surgeon, Central Pacific Base Command, he reorganized the medical service in the Hawaiian area, planned and executed the medical logistical support for combat operations and superintended the hospitalization of battle casualties of the Pacific Ocean areas. By his devotion to duty, executive ability and superior medical and military attainments he made material contributions to the successes of our armed forces in the war against Japan. As commanding officer, Dibble General Hospital, Menlo Park, Calif., from June 1945 to February 1946 he initiated and supervised a comprehensive program of training and care for the blind and in cooperation with the Corps of Engineers designed and constructed clinics and wards for the treatment of blinded patients. Colonel Streit's work in this field did much to lighten the burden of the patients and was a valuable contribution to the medical service. Dr. Streit graduated from the University of Texas in 1916 and entered the military service in 1917.

Colonel John E. Gordon

The Legion of Merit and the U. S. Typhus Commission Medal were recently awarded to Col. John E. Gordon, M. C., A. U. S., Boston. The citations were, in part, as follows: 1. As chief of the preventive medicine division, Office of the Surgeon, Headquarters, European Theater of Operations, his vigilant surveillance of all possible dangers from contagious and communicable diseases has been largely responsible for the singularly high standard of health in this theater. His effective supervision of all phases of preventive medicine facilitated the general efficiency of the Medical Department in its support of the personnel of the United States Army. 2. He rendered exceptionally meritorious service in the control of epidemic typhus in the American occupied region of Germany during the period from May 19 to July 7, 1945. His intelligent supervision of modern control methods checked the spread of typhus in the inner reich, protected the advancing American forces and prevented the dissemination of typhus with the return of repatriates into France. Dr. Gordon graduated from Rush Medical College of the University of Chicago in 1925 and entered the military service June 14, 1942.

Captain Harry Most

The Legion of Merit has been awarded to Capt. Harry Most, M. C., A. U. S., of New York, who rendered exceptionally meritorious service while serving as chief of malaria research, Kennedy General Hospital, and chief of tropical disease section, Moore General Hospital, from January 1944 to January 1946. The citation relates that his unusual knowledge of tropical diseases made his work a primary factor in the successful operation of the Tropical Disease Center. Captain Most's accomplishments in this field materially benefited the medical profession and were of extreme value to the Medical Department in this phase of its mission. Dr. Most graduated from New York University College of Medicine in 1931 and entered military service in January 1944.

Major Emil E. Merkel

The Bronze Star Medal has been awarded to Major Emil E. Merkel, M. C., A. U. S., of Los Angeles, because of the meritorious service he performed on May 2, 1942 on Corregidor, Philippine Islands. The details are given in the citation: When a mortar battery received a hit during a heavy hostile artillery concentration he ran to the position and, as the enemy barrage continued, administered first aid to the wounded men. Major Merkel's action, done without regard for his own safety, reflects great credit on himself and on the military service. Dr. Merkel graduated from the College of Medical Evangelists in 1940 and entered the military service Dec. 15, 1940.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest: such as relate to society activities, new hospitals, education and public health.)

CALIFORNIA

Chiropractor Held in Fraud.—According to the San Francisco *Examiner* an asserted racket was exposed in January in an eleven count federal mail fraud indictment against chiropractor John A. Zanetti, 49. Zanetti is operator of the National Clinical Institute, 224 Rosenberg Building, Santa Rosa. Advertising a sure cure for arthritis, he solicited victims to send $1 for information as to how they could be cured, the indictment charged. Once the first application for information had been made, Zanetti mailed the prospect literature claiming to have discovered a "miraculous new cure" for arthritis, James T. Davis, assistant U. S. attorney, said. The cure could be obtained for $250. If the money was not forthcoming within a few days, follow-up letters with special reductions were sent. When the second payment had been received, Davis declared, Zanetti mailed printed instructions in which he described arthritis as a "nervous disorder" and set up a course of action which he said would result in a cure. Davis said the local postoffice inspector's office was swamped with complaints of those who had been mulcted.

Stanford University Establishes Eye Bank.—Officials of Stanford University announced March 7 the establishment of an eye bank, a community service organization dedicated to providing corneal material for eye graft operations. Located at Stanford University Hospital, San Francisco, the organization will bring to blind and partially blind West Coast residents the same opportunity for sight improvement available to Easterners through eye banks now operating in New York, Boston and Chicago. The principal function of the local eye bank is the collection, preservation and distribution of eyes to obtain corneal tissue. All qualified eye surgeons on the Pacific Coast will be invited to make use of the bank's facilities. The corneas collected and preserved by the eye bank are to be distributed without cost to either patient or surgeon, except for a small service fee to cover the cost of handling. Plans for expeditious transportation of the corneal tissue were made March 6 at a luncheon at which the Air Express, United Airlines, Railway Express and Greyhound Bus Lines promised full cooperation. The university was represented by Dean Chandler, Dr. Anthony J. J. Rourke, Stanford Hospital physician-superintendent, Drs. Max Fine and Dohrmann K. Pischel, eye surgeons, and Mrs. John W. Hartman, eye bank secretary. With this announcement university officials issued a call for registration of donors wishing to donate their eyes to the bank after death. Information on the procedure for registration of donors can be secured by telephoning WEst 1-8000, where twenty-four hour service is available, or by writing to the Stanford Eye Bank, 2398 Sacramento Street, San Francisco. Other objectives of the eye bank will be to promote interest in research aimed at developing successful methods of preserving corneal tissue for longer periods than are now possible and to encourage investigation leading to improved methods of corneal transplantation.

ILLINOIS

Mild Influenza.—An outbreak of mild influenza reached epidemic proportions in Illinois March 6, according to Dr. Jerome J. Sievers, head of the division of communicable disease of the state department of health. He added that the outbreak had started in the southern section of the state and spread rapidly.

Evanston Hospital to Expand.—The erection of an addition to Evanston Hospital, Evanston, estimated to cost $1,250,000 will begin in June as the first step in a $5,000,000 expansion program. Succeeding steps will be to replace with fireproof structures the maternity building, the children's building and the administration building; to add buildings for the care of tuberculosis, arthritis, poliomyelitis, eye, ear, nose and throat, psychiatric and psychosomatic, chronic and old age diseases and contagious diseases, and to provide additional general beds with equipment to handle the steadily increasing population of the north suburban area.

New Director of LaSalle County Sanatorium.—Dr. H. Vernon Madsen, Waterloo, Iowa, has assumed duties as medical director and executive of the LaSalle County Tuberculosis Sanatorium, Ottawa, replacing Dr. Loren L. Collins, who resigned September 1 to become medical director for a sanatorium in Madison County, Ill. Dr. Madsen, a graduate of the University of Iowa College of Medicine, has served on the staffs of state sanatoriums in Iowa, North Dakota and Indiana and was medical director of the Smith-Estab Memorial Hospital, Richmond, Ind. Before taking the Ottawa position he was engaged in private practice in chest diseases in Waterloo.

Chicago

The Wilder and Kretschmer Lectures.—The William Hamlin Wilder Memorial Lecture will be delivered May 23 at the Palmer House by Dr. John Q. Griffith Jr., Laboratory for the Study of Hypertension, Philadelphia, on "Rutin: A Therapy for the Hemorrhagic Complications of Hypertension." The sixth Edwin R. Kretschmer Memorial Lecture will be delivered April 25 at the Palmer House by Dr. Charles H. Watkins, Mayo Clinic, Rochester, Minn., on "Evaluation of Recent Drugs in the Control of Experimental and Human Leukemia."

Drive to Clean Up Restaurants.—On February 12 the president of the board of health, Dr. Herman N. Bundesen, began a drive to "close up every dirty eating and drinking place in Chicago" (The Journal, January 25, p. 255). Some twenty-eight additional food inspectors have been added to the staff; most of the restaurant owners are cooperating with the health department, and an ordinance which would conform closely to the model law proposed by the U. S. Public Health Service is being drafted. Some restaurants were temporarily closed by the city health department, including two in railroad stations, which were allowed to reopen after the insanitary conditions had been corrected. Seven additional restaurants were closed on March 13, including the one at the St. Claire Hotel, 162 East Ohio Street. The health department inspectors in reporting on the St. Claire had said that the kitchen floor, work benches and ice box were dirty, decaying food was on the counters, the meat slicers were dirty and the dish washer lacked required chlorine. Food in the refrigerators had water dripping on it from the ice compartment, and milk was standing unrefrigerated. When hotel officials had previously refused to obey a health department order to close until violations were corrected, Dr. Bundesen went to the hotel, personally closed it and had police assigned to the hotel to see that his order was obeyed. The other restaurants closed on the same date were Annes', 91 West Randolph Street, the Coney Island Lunchroom, 556 East Forty-Seventh Street and restaurants at 551 South State Street, 75 West Van Buren Street, 245 East Thirty-Ninth Street and 4424 Broadway. Rickett's Restaurant at 105 East Chicago Avenue and the Fish and Chips, 72 East Randolph Street, were permitted to remain open because they had corrected previous violations, which were not of a major character. All these restaurants with the one exception closed of their own volition and will be permitted to reopen, as will the St. Claire's restaurant, when conditions are remedied. Twenty-six other eating places previously temporarily closed were found to have complied with rules and were allowed to reopen. Dr. Bundesen said that "fully 80 per cent of the restaurants and hotels have done a fine job. We will be forced to close the kitchens of those which do not comply." He stated that the spread of upper respiratory diseases may be aided by dirty dishes, insanitary handling, dirty lukewarm dishwater and insanitary conditions in the kitchens.

INDIANA

Brucellosis Survey.—The Indiana State Board of Health and Purdue University, with the cooperation of the U. S. Bureau of Animal Industry and the U. S. Public Health Service, is making a study of brucellosis in Indiana to determine the extent, location and distribution of undulant fever. In selected representative areas the size of townships, all farm people are given blood tests. At the same time samples are taken from all dairy cattle, horses and goats and of the breeding swine, cattle and sheep. Other groups of highly exposed individuals, workers in rendering and packing plants, are also being surveyed. The Bureau of Animal Industry has supplied personnel and a trailer laboratory to test animals. Blood tests are done by the state board of health laboratory in Indianapolis, and at Purdue effort is being made to isolate the organism. Cooperation of the people is gratifying. When half of Daviess County had been surveyed, about 1 per cent of both animals and human beings reacted to the test. Blood samples taken by county health officers, private physicians and state board of health personnel showed that 28 per cent of rendering plant workers showed various degrees of reactivity at the halfway point in the survey. In the one packing plant surveyed, 13.5 per cent of those tested gave a reaction. Laboratories in Indianapolis and Purdue have made 18 isolations from human blood; 61 per cent were of the abortus type, 22 per cent the suis type and 17 per cent the melitensis, or goat, type.

IOWA

State Medical Meeting at Des Moines.—The Iowa State Medical Society will hold its ninety-sixth annual session at Des Moines April 16-18 at the Hotel Fort Des Moines under the presidency of Dr. Robert L. Parker, Des Moines. Among the speakers at the Wednesday afternoon pediatric and obstetric symposium are:

Dr. Alexis F. Hartmann, St. Louis, Principles Governing the Choice and Parenteral Administration of Fluids.
Dr. Ralph A. Reis, Chicago, Diabetes in Pregnancy.
Dr. Ralph Luikart, Omaha, Obstetrics—Yesterday and Today.
Dr. John R. Schenken, Omaha, The Rh Factor.

Other speakers included in the general and special sessions on succeeding days are:

Dr. Charles W. Mayo, Rochester, Minn., Some Provocative Cases.
Dr. H. Harlan Crank, Topeka, Kan., Psychosomatic Medicine: General Considerations.
Dr. Arthur M. Culler, Columbus, Ohio, Hemorrhage in the Fundus.
Dr. Grandison D. Royston, St. Louis, Uterine Bleeding.
Dr. Joseph B. Vander Veer, Philadelphia, Principles of Digitalis Therapy and Comments on Various Preparations and Methods of Administration.
Dr. Isador S. Ravdin, Philadelphia, Some Problems of Biliary Tract Disease.
Dr. Robert L. Parker Jr., Rochester, Diagnosis of Congenital Cardiac Malformations for Which Surgery Is Indicated.

A symposium on poliomyelitis will be held Friday at 3 p. m. with Drs. Ralph K. Ghormley, Rochester; Gaylord W. Anderson, *Minneapolis; Lee F. Hill, Des Moines, and Earl C. Elkins,* Rochester, Minn., participating. The Medical and Surgical sections will meet Thursday and Friday afternoons, the Eye, Ear, Nose and Throat section all day Thursday, and the Pediatric section Thursday morning. The State Society of Iowa Medical Women and the American Medical Women's Association, Branch 19, will meet Wednesday, April 16. At the annual banquet April 17 Dr. George F. Lull, secretary and general manager of the American Medical Association, will be the speaker. Doctors with hobbies are invited to make arrangements for their exhibits by April 1 by writing the central office, 505 Bankers Trust Building, Des Moines.

MARYLAND

Social Medicine Lecture.—A public De Lamar lecture on "Teaching and Research in Social Medicine: An Account of the Oxford Experiment" was given March 4 by Sir John Ryle, Nuffield professor of social medicine, Oxford University, at Johns Hopkins University School of Hygiene and Public Health, Baltimore.

MICHIGAN

University Appointment.—M. Evans Maxfield, Ph.D., at present assistant professor of physiology at Mount Holyoke College, South Hadley, Mass., has been appointed to the staff of the department of pharmacology and therapeutics at Wayne University College of Medicine, Detroit.

Resigns to Enter Private Practice.—Dr. George A. Sherman, director of the state health department bureau of tuberculosis control since 1941, resigned to enter private practice March 1. Before joining the state health department staff he was director of the Oakland County Tuberculosis Sanatorium and an instructor at the University of Michigan.

MISSISSIPPI

Applications for Student Aid.—Applications for loans effective in September and October are being received by the State Medical Education Board, Jackson, for use of students interested in obtaining financial assistance under the medical education scholarship loan program recently set up (The Journal, February 1, p. 335). Mrs. Maria Voskamp, Jackson, is the executive secretary.

MISSOURI

Cancer Research.—Washington University, St. Louis, was one of twenty-one universities to receive grants for cancer research, it was announced by the National Advisory Council. The work will be supervised by Dr. Sherwood Moore, professor of radiology and head of the department, and a member of the advisory council; Arthur L. Hughes, D.Sc., consulting physicist to Mallinckrodt Institute of Radiology; Dr. Edward H. Reinhard, assistant professor of medicine and radiology, and Dr. Carl V. Moore, professor of medicine.

New Health Commissioner.—Dr. Cecil A. Z. Sharp, Joliet, Ill., health commissioner of Will County, Ill., has been appointed health commissioner of St. Louis County, Mo., effective April 1, replacing Dr. Ruth I. Allen, acting commissioner, who will return to her former duties as director of Maternal and Infant Hygiene. Dr. Sharp, a graduate of the University of Geneva, Switzerland, was in private practice before joining the staff of the Illinois Health Department. He received a degree of Master of Science in Public Health at the University of Michigan, 1938. In his new position he will also serve as assistant professor of public health and preventive medicine at the Washington University School of Medicine, St. Louis.

Annual State Medical Meeting.—The eighty-ninth annual session of the Missouri State Medical Association will be held March 30-April 2 at the municipal Auditorium and Hotel President in Kansas City under the presidency of Dr. Howard B. Goodrich, Hannibal. The council meeting March 30 at 4 p. m. will be followed by a dinner for secretaries and presidents of the county medical societies. The first general meeting Monday afternoon will be in part a discussion of the medical care of veterans. Among the speakers will be Dr. Robert M. Zollinger, Washington, D. C. Among the speakers at the general sessions will be Drs. Herman W. Johnson, Houston, Texas, "Uterine Ring Dystocia"; Arthur M. Olsen, Rochester, Minn., "Diagnosis and Treatment of Bronchial Lesions",; William A. Altemeier, Cincinnati, "Chemotherapy as Used in Surgical Conditions"; Donald R. Nichols, Rochester, Minn., "Chemotherapy as Used in Medical Conditions," and Garfield G. Duncan, Philadelphia, "Some Nutritional Pitfalls in General Hospitals."

There will be symposiums on poliomyelitis, chemotherapy, nutritional deficiencies and industrial health. Other features of *the sessions will be motion pictures and scientific exhibits, and* a banquet Monday night honoring past presidents. The Woman's Auxiliary will meet March 30-April 1 at the Hotel Muehlebach.

NEW JERSEY

Personal.—Dr. Abraham Z. Barhash, Newark, has been appointed director of the division of community clinics of the National Committee for Mental Hygiene, succeeding Dr. Milton E. Kirkpatrick, New Orleans. Dr. Barhash served in the army as a neuropsychiatrist.

Cancer Week.—The Passaic County Medical Society will have charge of the exhibits and motion pictures on the lay program for Cancer Week, April 1-5, at the Public Library, Paterson. Dr. Anthony J. Delario, Paterson, will give a talk at 7:30 p. m. on April 1; Dr. Jacob Roemer, Paterson, April 3; Dr. Andrew F. McBride Jr., Paterson, April 4, and Dr. John J. Szymanski, Passaic, April 5.

Lecture by Dr. Kennedy.—Dr. Foster Kennedy, professor of clinical medicine (neurology), Cornell University Medical College, New York City, addressed the reciprocity meeting of the Woman's Auxiliary to the Hudson County Medical Society, Jersey City, March 3, on "The Organic Background of Mind." Dr. Kennedy is also director of the neurologic department of Bellevue Hospital, New York City. He recently returned from the Pan American Medical Congress meeting in Cuba.

NEW YORK

Committee for Education on Alcoholism.—As a result of interest growing out of the work of Alcoholics Anonymous groups, a committee for education on alcoholism, consisting of physicians, members of the clergy, social workers, industrialists, law enforcement officers and others in Rochester, has been formed. The committee wishes to provide for medical care of chronic alcoholic addicts. Dr. G. Kirby Collier, Rochester, is honorary chairman of the committee.

Meeting of Diabetes Association.—The New York Diabetes Association, Inc., under the auspices of the committee on research, will hold an open meeting at 8:30 p. m., March 31, at the New York Academy of Medicine. "Recent Observations on Experimental Diabetes" by Dr. Francis D. W. Lukens, assistant professor of medicine and director of the George S. Cox Medical Research Institute, University of Pennsylvania, and "Insulin Requirement and Exercise" by Dr. Harold E. Himwich, chief, clinical research branch, medical division, Edgewood Arsenal in Maryland, make up the program. The discussion to follow will be opened by Dr. DeWitt Stetten Jr., department of biochemistry, Columbia University College of Physicians and Surgeons, New York.

New York City

Health Nursing Center Opened in Chinatown.—The Community Service Society opened a health nursing center at the Chinese Community Club, 24 Pell Street, February 27. The ultimate aim of the service work in Chinatown will be to add facilities for health examinations and to hold sessions in nutrition and the care of infants.

Sydenham Emergency Fund Raised.—The emergency fund to save Sydenham Hospital now totals $300,000 following a series of personal contributions and benefits. The hospital, when confronted with the possibility of closing last November, made an appeal for $300,000 on Thanksgiving Day. Sydenham in 1943 was reorganized as an interracial voluntary hospital.

Positions for Psychiatrists Open.—Positions are available for 13 psychiatrists at the newly opened psychiatry pavilion of Kings County Hospital, Brooklyn, the salaries ranging from $3,650 to $6,000 a year, the New York City Department of Hospitals announces. When staffing is completed this facility will be a self-contained hospital promoting every aspect of up to date psychiatric diagnosis and treatment (The Journal, March 1, p. 637). The building includes complete x-ray and surgical setups with full laboratory facilities. Inquiries and applications should be addressed to Dr. Sam Parker, director of psychiatry, Kings County Hospital, Brooklyn 3.

Norway Withdraws Embargoed Sardines.—The Norwegian government has voluntarily agreed to withdraw 1,000 cases of Norwegian sardines embargoed by the New York City Health Department from the New York City market, Health Commissioner Israel Weinstein announced March 7. An investigation following an outbreak of 20 cases of mild food poisoning among New Yorkers (The Journal, January 4, p. 50) has been carried on by both the Norwegian government and the New York City Health Department. The investigation, Dr. Weinstein said, indicated that a very small number of cans had sprung leaks and allowed bacteria to get into the cans. A small percentage of aluminum cans were found with defective seams. In Norway the Norwegian canning industry, which is under sanitary supervision by the government, has instituted rigid control over seaming equipment and practices.

Scroll Commemorates Founding of A. M. A.—In recognition of the approaching centennial celebration a scroll commemorating the founding meeting of the American Medical Association was presented to Dr. Currier McEwen, dean of New York University's College of Medicine at the annual alumni day dinner of the college, February 21. More than 250 alumni of the College of Medicine attended. The scroll, commemorating the National Medical Convention of May 1846, was presented to Dean McEwen by Dr. Nathan B. Van Etten, New York City, Past President of the American Medical Association. The scroll was signed by Dr. Van Etten, Dr. William C. White, president of the Medical Society of the County of New York, and Dr. Hippolyte M. Wertheim, New York City, president of the College of Medicine Alumni Association. This year also marks the one hundredth anniversary of the formal association of the faculty of the New York University College of Medicine and Bellevue Hospital, Dean McEwen said in his speech of acceptance. In 1847 a permanent medical board was set up by the city to supervise medical care and teaching at the hospital. Included on the board were a number of the faculty members of New York University. This was the beginning of a relationship which has continued uninterruptedly and has grown to a point where the faculty of the college is now responsible for the care of more than three fourths of the patients at Bellevue Hospital, the dean said. In conjunction with the dinner and other Alumni activities, Dr. Claude E. Heaton, College of Medicine faculty member, opened an exhibit of one hundred years of medicine in New York. Chancellor Harry W. Chase of New York University was a speaker at the dinner, as were Homer W. Smith, Sc.D., professor of physiology at the college, and Dr. Wertheim.

OHIO

University News.—Extensive preparations for a fund raising campaign in behalf of the University of Cincinnati College of Medicine were announced late in February by Dr. Eslie Asbury, Cincinnati, general chairman of the committee of local physicians and surgeons. Funds are sought for strengthening and enlarging the department for earlier years of medical training to keep the school at its present professional level.

PENNSYLVANIA

Society News.—At a joint meeting of the Reading Eye, Ear, Nose and Throat Society and the Diplomates Association of Berks County physicians, February 19, Dr. Eugene P. Pendergrass, Philadelphia, gave an address on "Atomic Energy in Medicine."

Charles Hatfield Honored.—Dr. Charles J. Hatfield, associate director and chairman of the board of trustees of Henry Phipps Institute for the Study, Treatment and Prevention of Tuberculosis, Philadelphia, was honored at an informal tea January 30 on the occasion of his eightieth birthday. The group in attendance represented the institute, the Pennsylvania Tuberculosis Society, the Philadelphia Tuberculosis and Health Association and other friends. In the absence of Dr. Esmond R. Long, director of the institute, because of illness, Dr. Frank A. Craig of the institute presided. Dr. Hatfield was presented two bound volumes of letters from friends, who took this means to pay tribute to him for his more than forty years of work and leadership in the tuberculosis control movement in Pennsylvania and throughout the country. He has also served twenty-five years as trustee for the University of Pennsylvania.

Philadelphia

Woman's Auxiliary Aids Student Loan Fund.—The Woman's Auxiliary to the Philadelphia County Medical Society has prepared and published "A Cook Book for Hungry Doctors," the income from which will go to the Corinna Keen Freeman Student Loan Fund and for other benevolent purposes. Here are the favorite recipes of some of Philadelphia's most distinguished physicians. The book is beautifully prepared and cleverly illustrated. Copies may be obtained by writing to the chairman, Mrs. Hugh Robertson, Twenty-First and Spruce streets.

TENNESSEE

Degree Granted in Medical Technology.—The University of Tennessee College of Medicine, Memphis, granted its first certificate in medical technology last December. Students entering the course with two years' previous college training will receive a certificate after fifteen months' additional work in technology, while those entering with three years' previous college training will receive a B.S. degree in addition to the certificate. Dr. Douglas H. Sprunt, Memphis, reports numerous requests from doctors and hospitals for technologists.

TEXAS

University News.—Chauncey D. Leake, Ph.D., vice president of the University of Texas, Galveston, delivered the William Snow Miller Lecture, "Letheon: The Cadenced Story of Anesthesia," March 18, in the auditorium of the university. The lecture was prepared as a tribute to the centennial of ether and chloroform anesthesia and was sponsored by the Phi Beta Pi fraternity.

Grant for Memorial Lectureship.—A five year grant of $2,500 to Southwestern Medical College, Dallas, for the establishment of the Charles P. Guerriero Sr. Memorial Lectureship in Obstetrics and Gynecology has been received. The fund is a gift of Dr. William F., Dallas, and George W. Guerriero, Monroe, La., in memory of their father. The lectures will be open to physicians, medical students, nurses and interested persons in allied professions.

WASHINGTON

Dr. Pullen Named Director of Hospital Planning.—The appointment of Dr. Roscoe L. Pullen, New Orleans, as associate professor of medicine and director of hospital planning at the new University of Washington Medical School, Seattle, was recently announced by Dr. Edward L. Turner, dean of the school. Dr. Pullen graduated at Northwestern University Medical School, Chicago. Before coming to Seattle Dr. Pullen was assistant director of the Charity Hospital of Louisiana, New Orleans.

WEST VIRGINIA

Superintendent Appointed.—Dr. Philip Johnson, Fairmont, has been appointed superintendent of Fairmont Emergency Hospital to succeed Dr. Chesney M. Ramage, who resigned, effective January 1. The appointment was made by Governor Clarence W. Meadows. Dr. Johnson served in the medical corps with the rank of major during World War II, being assigned to a hospital in France for over a year.

Personal.—Dr. Newman H. Dyer, Charleston, state health commissioner, has been appointed a member of the governing council of the southern branch of the American Public Health Association.——Dr. Andrew P. Sackett, medical officer in charge of Kanawha Valley Medical Center (VD), South Charleston, has been appointed acting director of the bureau of venereal disease control in the state health department. Dr. Sackett will continue as medical officer in charge of the rapid treatment center in South Charleston.

WISCONSIN

Industrial Clinics.—Industrial medical inplant clinics scheduled for Racine April 8, Fort Atkinson April 9 and Green Bay April 10 are being presented by the council on scientific work of the State Medical Society of Wisconsin in cooperation with the committee on industrial health of the Wisconsin State Medical Society and the industrial hygiene unit of the state board of health. Subjects to be discussed at Racine are exposures of hot metals, heavy machinery, dust, fumes, solvents and eye injuries; at Fort Atkinson, exposures of foundry paints, handling of sheet metals and eye injuries, and at Green Bay, exposures of rollers, damp working conditions, chemical solvents and eye injuries.

GENERAL

Swiss Red Cross Chief Resigns.—Max Huber, Swiss acting president of the International Committee of the Red Cross, has resigned, according to the New York *Times*. Ernest Bloer and Martin Bedmer have been appointed to undertake the president's duties for this year.

Special Society Elections.—At the recent first annual meeting of the Southern Society for Clinical Research, New Orleans, Dr. Tinsley R. Harrison, Dallas, Texas, was elected president; Dr. William J. Darby Jr., Nashville, Tenn., vice president, and Dr. Thomas Findley, New Orleans, secretary and treasurer.

Research on Pollen Extracts.—Through a grant of $1,500 for research on the standardization and purification of pollen extracts from Marcelle Cosmetics, Inc., Chicago, the American College of Allergists will continue the studies started over a year ago by its standardization committee. These studies will be under the direction of Morris Scherago, D.V.M., head of the department of bacteriology of the University of Kentucky.

Psychiatric Foundation Formed.—Under the sponsorship of the American Psychiatric Association and the American Neurological Society, a Psychiatric Foundation has been formed to train psychiatrists, psychiatric nurses, psychiatric social workers, psychologists, occupational therapists and allied workers. It also will establish a program of research into causes and cures of mental diseases, take the lead in modernizing and broadening existing laws related to psychiatry and give special emphasis to the development of child psychiatry.

International Medical Congresses. — On March 7 a preparatory conference was held in Unesco-House, Paris, for the creation of a permanent bureau of international medical congresses. It was attended by the presidents or delegates of seventeen international medical congresses and associations, together with representatives of the World Medical Organization. The creation of a permanent bureau to encourage and develop international congresses in the medical sciences was considered.

Psychiatric Clinics for Children.—The American Association of Psychiatric Clinics for Children had at the beginning of this year twenty-nine member clinics and four associate member clinics. The association, founded last November, is designed to act in an advisory capacity to the National Committee for Mental Hygiene. The officers of the association are Drs. Frederick H. Allen, Philadelphia, president; Harry M. Little, Pittsburgh, vice president, and Frederick Rosenheim, Boston, secretary-treasurer.

Campaign to Combat Multiple Sclerosis.—At a meeting of neurologists of the United States and Canada at the Academy of Medicine, New York, February 21, a campaign to combat multiple sclerosis was inaugurated. According to Dr. Tracy J. Putnam, New York City, honorary chairman of the newly organized Association for the Advancement of Research in Multiple Sclerosis (The Journal, Oct. 19, 1946, p. 402), this is the first time that leading neurologists have directed attention on a national basis to a crippling disease which attacks men and women during the most useful periods of their lives.

Awards for Research.—Dr. Irving S. Wright, New York Hospital, New York City, and the College of Veterinary Medicine, University of Illinois, Chicago, are the recipients of two research grants recently made by Sharp and Dohme, Inc., Philadelphia. The grant to Dr. Wright will partially support research he has initiated on peripheral vascular diseases, particularly thrombosis. The University of Illinois grant will afford increased support to a research program under the direction of Dean Robert Graham and associates on the value of various sulfonamides in the treatment of diseases of livestock and poultry.

Pediatricians Appoint Liaison Officer.—Dr. George F. Munns, Winnetka, Ill., was recently appointed by the board of the American Academy of Pediatrics as liaison officer between the academy and the National Society for Crippled Children and Adults. Dr. Munns, who will counsel the society in its nationwide program, is a clinical instructor in pediatrics at Northwestern University, a member of the Chicago Pediatric Society and of the Society for Research in Child Development and associate attending physician at Children's Memorial Hospital, Chicago. He received his M.D degree at the University of Cincinnati.

Book Center for War Devastated Libraries. — The American Book Center for War Devastated Libraries has been urged to continue meeting the need for American publications at least through 1947. The book center is therefore making a renewed appeal for American books and periodicals, for technical and scholarly books and periodicals in all fields and particularly for publications of the past ten years. The generous support which has been given to the Book Center has made it possible to ship more than 700,000 volumes abroad in the past year. It is hoped to double this amount before the book center closes. Books and periodicals which can be spared are urgently needed and will help in the reconstruction which must preface world understanding and peace. Ship contributions to the American Book Center, % the Library of Congress, Washington 25, D. C., freight prepaid, or write to the center for further information.

Wendell Stanley to Receive Chemist's Medal.—The award of its 1947 Willard Gibbs medal to Wendell M. Stanley, Ph.D., Rockefeller Institute for Medical Research, Princeton, N. J., and Nobel Prize winner in chemistry last year, was announced by the Chicago section of the American Chemical Society March 8. The medal goes to Dr. Stanley in recognition of his discoveries in the chemistry of viruses. The award will be presented at a meeting of the Chicago section May 23. Dr. Stanley received his Ph.D. from the University of Illinois in 1929 and his Sc.D. from Harvard University in 1938. Other honors he has won include the American Association for the Advancement of Science prize in 1936, the Rosenberger Medal, University of Chicago, in 1938, the Adler Prize from Harvard in 1938 and the gold medal of the American Institute in 1941. Dr. Stanley spoke at a meeting of the University of Illinois section of the American Chemical Society at Urbana February 20 on the influence of vaccine on influenza.

FOREIGN

Awarded Albert Medal.—Sir Alexander Fleming, University of London, and Sir Howard W. Florey, Oxford University, jointly received the Albert Medal of the Royal Society of Arts this year for their services in the discovery and development of penicillin. It was handed to them privately by Viscount Bennett, president of the society.

Smallpox Epidemic.—The Burmese government, to halt a smallpox epidemic at Rangoon, began this week to evacuate 100,000 refugees who came to Rangoon to escape rural robber bands, the Associated Press reports. The smallpox death rate has risen to 30 per cent of reported cases. The minister of social service said that 30,000 mat huts will be torn down and the refugees moved to a settlement outside the city.

Marriages

William J. Borgsmiller, Murphysboro, Ill., to Miss June Christine Knox of Wetmore, Mich., in Chicago Dec. 21, 1946.

William Chapman Butz, Darlington, Wis., to Miss Christine Frances Westbrook in Ancon, Canal Zone, recently.

Duane Montgomery Kline Jr., Baxter Springs, Kan., to Miss Joanna Gleed Wagstaff of Lawrence, Kan., in October.

Frederick Ward Allen Jr., Rutherford, N. J., to Miss Gloria Lillian Immenhausen of Chicago, Aug. 31, 1946.

Cyril Eustace Bousfield, Woolwich, Maine, to Mrs. Sarah Bagley Wright at Arlington, Mass., January 1.

Lauren Osborne Gibson, Statesville, N. C., to Mrs. Ruth Whitten of Hillsboro, Ill., Dec. 27, 1946.

Frank Reece Wrenn Jr. to Miss Martha Elizabeth Sullivan, both of Anderson, S. C., Dec. 19, 1946.

Robert J. Muench, Des Plaines, Ill., to Miss Florence L. Alexander in Melrose Park November 3.

Thomas J. McKean, Montpelier, Ind., to Mrs. Grace Nordman of Cairo, Ill., November 7.

Robert Ashley Hall, Paintsville, Ky., to Miss Helen Lee Mayo in Louisville, Dec. 21, 1946.

Norton S. Brown to Miss Ilka Chase, both of New York, in Las Vegas, Nev., recently.

Richard A. Betts and Miss Aileen Boutin, both of Spokane, Wash., Dec. 21, 1946.

Deaths

Harry Plotz, consultant to the Secretary of War and during the war chief, division of virus and rickettsial diseases at the Army Medical School in Washington, D. C., died in the Walter Reed General Hospital January 6, aged 56, of old and recent occlusions of the coronary arteries with infarcts of the heart. Dr. Plotz was born in Paterson, N. J., on April 18, 1890. He received his medical degree from the Columbia University College of Physicians and Surgeons in New York in 1913 and interned at Mount Sinai Hospital in New York. When World War I began he went to Siberia with the Red Cross Typhus Commission to help fight an epidemic and worked there until 1916, when he became an adviser to the Surgeon General in Washington on problems of sanitation. He invented an army delouser and he fought typhus in Poland and Russia after the war. During World War I he attained the rank of lieutenant colonel. In 1921 Dr. Plotz became associated with the Pasteur Institute in Paris as director of laboratories and was the first American to be named to its permanent staff. His work on measles was exceptional and he collaborated in developing a technic which made possible the mass production of a vaccine against typhus fever of the European type. In 1940 he joined the Harvard University laboratory as a visiting physician and in the following year reentered the Army of the United States as one of the original members appointed by the President to serve on the United States Army Typhus Commission, retiring one year ago with the rank of colonel. While at the Army Medical Center in Washington he established the virus and rickettsial section of the Army Medical School. He was a trustee of the Ella Sachs Plotz Foundation for the Advancement of Medicine, which was founded in memory of his wife, who died in 1922. Dr. Plotz was an officer of the Legion of Honor and held the Legion of Merit, the Typhus Commission Award and several Serbian and Bulgarian decorations. He was a member of the Association of Immunology, the Society for Experimental Biology and Medicine, the Harvey Society and other scientific organizations.

Sidney Mainer Lister ⊕ Houston, Texas; born in Colita, Texas, Nov. 13, 1875; Barnes Medical College, St. Louis, 1898; fellow of the American College of Surgeons; past president of the Harris County Medical Society; an examining physician for Selective Service during World wars I and II; member of the city and state boards of health and for many years on the state prison board; vice president and director of the Gibralter Building and Loan Association; one of the founders and twice served as head of the Jefferson Davis Hospital; served as chief of the staff of the Memorial Hospital, where in 1940 he was awarded a medal for thirty-two years of service on the staff and where he died Nov. 16, 1946, aged 71, of arteriosclerotic heart disease.

Samuel Alexander Thompson ⊕ Camden, Ark.; born in Glenville, Ark., in 1889; University of Arkansas School of Medicine, Little Rock, 1914; past president of the Ouachita County Medical Society and the Fifth Councilor District Medical Society; for many years chairman of the state maternal and welfare committee of the Arkansas Medical Society; member of the executive board of the Arkansas Association for the Crippled; served as chief medical examiner for the Ouachita Selective Service Board during World War II and on the advisory committee of the Children's Bureau in Washington, D. C.; past president of the Lions Club; member of the chamber of commerce; died in Little Rock Nov. 24, 1946, aged 57, of glioblastoma.

Luke B. Stephens, Paris, Texas; Baylor University College of Medicine, Dallas, 1905; member of the American Medical Association, Fourteenth District Medical Society and the Texas Oto-Laryngological Society; for many years a member of the school board; past president of the Lamar County Medical Society; veteran of the Spanish-American War and World War I; during World War II was a member of the Texas Defense Guard and served on the local Selective Service Board; on the visiting staffs of St. Joseph's and Lamar hospitals; died while on a deer hunting trip near Llano Nov. 18, 1946, aged 70, of coronary heart disease.

Max Brav, Dayton, Ohio; National Medical University, Chicago, 1906; died in the Miami Valley Hospital Nov. 13, 1946, aged 67.

William Howard Carpenter ⊕ Woodbury, N. J.; University of Pennsylvania Department of Medicine, Philadelphia, 1892; served during World War I; for many years medical director of the Girard Life Insurance Company of Philadelphia and medical examiner for many insurance companies; formerly director of the Salem (N. J.) National Bank and Trust Company; died in the Underwood Hospital Dec. 15, 1946, aged 75, of carcinoma of the prostate.

William Oscar Clarke, Hibbing, Minn.; University of Minnesota Medical School, Minneapolis, 1938; served a rotating internship at the Minneapolis General Hospital and a residency in internal medicine at the University Hospitals, where he had been a teaching fellow in internal medicine; served in the medical corps of the Army of the United States during World War II; died at Rawah Ranch, Glendevey, Colo., June 17, 1946, aged 36, of coronary occlusion.

Charles G. Cook, Weimar, Texas; Medical Department of Tulane University of Louisiana, New Orleans, 1897; member of the American Medical Association; past president and secretary of the Colorado County Medical Society; veteran of the Spanish-American War; school trustee and city health officer; died Nov. 6, 1946, aged 71 of cerebral hemorrhage.

Herbert Jones Erwin, Gastonia, N. C.; Leonard Medical School, Raleigh, 1908; affiliated with the Gaston County Negro Hospital; died Dec. 29, 1946, aged 67, of congestive heart failure.

Richard Bland Ford, Corpus Christi, Texas; University of Oklahoma School of Medicine, Oklahoma City, 1928; member of the Oklahoma State Medical Association; served in the medical corps of the U. S. Naval Reserve during World War II; died Nov. 30, 1946, aged 45.

Isabelle Parker Gibby, Brighton, Mass.; Boston University School of Medicine, 1893; died Nov. 22, 1946, of arteriosclerotic heart disease.

Jacob Casper Hutzelman ⊕ Glendale, Ohio; Ohio-Miami Medical College of the University of Cincinnati, 1913; served on the staff of the Mercy Hospital in Hamilton; died Dec. 12, 1946, aged 63, of heart disease.

Irvin Arthur Ihrke, Oshkosh, Wis.; Rush Medical College, Chicago, 1934; member of the American Medical Association; interned at Oak Park (Ill.) Hospital; formerly city physician; served in the medical corps, Army of the United States, overseas during World War II; died Dec. 4, 1946, aged 41, of bronchopneumonia.

John Roland Lynn ⊕ Hazen, Ark.; Memphis (Tenn.) Hospital Medical College, 1887; honorary member of the Arkansas Medical Society; served as president of the Prairie County Medical Society; surgeon for the Rock Island Railway; formerly member of the state and county boards of health; city health officer; died Dec. 2, 1946, aged 79, of heart disease.

Howard Albert Mahaffey, Hillsboro, Texas; University of Louisville (Ky.) Medical Department, 1903; member of the American Medical Association; past president of the Hill County Medical Society; county health officer for many years; local physician for the Missouri, Kansas and Texas Railroad for many years; examining physician for Selective Service in Hill County during World War II; died in Fort Worth Nov. 3, 1946, aged 72, of bronchogenic carcinoma of the right lung.

Frederick M. Mullino, Montezuma, Ga.; Southern Medical College, Atlanta, 1892; past president of the Macon County Medical Society; died in the Macon County Clinic Dec. 12, 1946, aged 79, of injuries received in an automobile accident.

Leonard Albert Myers ⊕ Houston, Texas; University of Oklahoma School of Medicine, Oklahoma City, 1922; member of the Texas Radiological Society and the Radiological Society of North America; on the staff of the Memorial Hospital; died Nov. 29, 1946, aged 50, of coronary thrombosis.

Edward Rodgers Neeper ⊕ Colorado Springs, Colo.; Keokuk (Iowa) Medical College, 1891; member of the American Academy of Ophthalmology and Otolaryngology; on the staff of the Glockner Sanatorium and Hospital; died Nov. 21, 1946, aged 79, of uremia.

Arthur John Nugent, Worcester, Mass.; Maryland Medical College, Baltimore, 1908; died Nov. 21, 1946, aged 66, of cerebral hemorrhage.

Arthur Lloyd Parks ⊕ Rome, Pa.; University Medical College of Kansas City, Mo., 1910; past president of the Bradford County Medical Society; served as mayor of Rome, U. S. pension examiner, health officer, state school inspector and examiner for the Veterans Administration; died Dec. 13, 1946, aged 63, of aneurysm of the aorta.

Edward Andrew Weir, Portland, Ore.; Harvard Medical School, Boston, 1893; formerly associated with the U. S. Public Health Service; died in the Veterans Administration Hospital, Roseburg, Nov. 4, 1946, aged 79, of acute ventricular failure.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Feb. 15, 1947.

No Medical Journals

The prolonged spell of arctic weather has produced a dangerous reduction of accumulated supplies of coal, which in turn has led to cuts in the supply of electricity and to the restriction of the production of newspapers which require electric power. Excepting daily and certain weekly newspapers dealing with general current news of a particular locality, all newspapers must cease publication from February 17 for a minimum period of two weeks. This restriction covers all the technical journals, including the medical. Thus the *British Medical Journal* and the *Lancet* announce that they do not expect to be able to publish in the next two weeks. The *British Medical Journal* states that on May 10, 1941 the *Journal's* printers were destroyed by German bombs but production was uninterrupted. The *Lancet* recalls that the general strike of 1926 reduced its weekly issue to a single sheet. But never before has the reading medical public been faced with the total suppression of issues. The only new element in the situation is a socialist government. But for the government it is argued that to make political capital out of a natural phenomenon—the prolonged arctic spell—is not fair. But this reply does not meet the criticism that the government should have in time built up a coal reserve for the bad weather always a possibility at this time of year. Instead it gambled on its absence. Further, there is the criticism that giving way to ever repeated demands of the unions for higher wages, characteristic of the socialist government, without ensuring greater output, has made coal a much more expensive item for the private consumer as well as for industry. If increased efficiency kept pace with increased wages, increased cost would not have followed. Government tampering with the coal industry began in the war, since which coal has doubled in price. Socialism can easily enact higher wages but never seems to ensure increased efficiency. That is not what the unions want, though they pretend that increased wages make for greater efficiency. In regard to production, the one thing the unions have always stood for is limitation of output. Government spokesmen tell the workers that whatever justification there may have been in the past for limitation of output, that need has now passed and every one should do his best. They are even reduced to imploring workers to do so, the only method—an ineffectual one—left after abolishing the competition of private enterprise and guaranteeing work to all regardless of how they perform it. The British public will learn soon more of the ill results of a system which removes all incentive to work well.

Negotiations With the Minister on the Health Service

As stated in a previous letter, the British Medical Association has decided to negotiate with the minister of health as to the best possible health service provided such discussions are comprehensive in their scope and the possibility that they may lead to further legislation is not excluded. After these discussions it is proposed to take a second plebiscite of the profession on the issue of entering the service. The *British Medical Journal* considers it highly gratifying that the representatives of the constituent bodies at the last meeting, at which representatives of the three Royal Colleges were present, had the wisdom to sink their differences by accepting the terms of the minister's invitation. It is noteworthy that his attitude is very different from his earlier one, when he declined to negotiate on important matters. He has climbed down from his autocratic position. Incidentally it may be pointed out that we are back to the characteristically English method of settling everything by compromise.

Central Health Council for National Health Service

The minister of health, Mr. Aneurin Bevan, has written to various organizations asking them to submit the names of suitable candidates for membership of the Central Health Council which he has to appoint under the National Health Service Act. The act provides that there shall be forty-one members of the council, of whom six shall be ex officio. The council is to include fifteen medical practitioners, of whom two must have knowledge of mental illness, five laymen with experience of hospital management, five laymen with experience in local government, three dental practitioners, two experts in mental health services, two registered nurses, one certified midwife and two registered pharmacists.

The British Journal of Nutrition

The cessation of the war has been followed by the publication of a number of new medical journals. The latest is the *British Journal of Nutrition,* a quarterly of which the first number is to appear in the first half of the year. It is not entirely new, for it will replace under the same auspices the *Proceedings of the Nutrition Society.* The chairman of the editorial board is Dr. S. K. Kon of the National Institute for Research in Dairying.

ITALY

(From Our Regular Correspondent)

Feb. 1, 1947.

Age Limits for University Professors

Italian university professors are required to give up teaching at the completion of the seventieth year of age. The secretary (minister) of public education proposed to the council of ministers that the age limit for university professors should be extended to the seventy-fifth year, since several university faculties and various councils of the association of the university professors have voted in favor of such prolongation. Many of the present day professors started their career when, according to the law, the age limit was still 75. It seems only fair that the same treatment should be granted to all, since the age limit has actually been extended for those professors who after having been removed from their teaching positions on political or racial grounds have now resumed teaching. The majority of professors are well fit for praiseworthy service up to the seventy-fifth year of age and their removal is to be considered as an undeserved "diminutio." One must also take into account that the masters may be forced to abandon prematurely the pupils of their school, who only could reach their final goal, i. e. university teaching assignment, by continuing their studies under the tutorship of their teachers for additional years. The economic reasons are the strongest, since the university professors who would go into retirement could not support themselves according to their standards on their pensions. Some faculties have expressed the opinion that the age limit should not be prolonged in order that the pensions may be conveniently increased, and that as a reward for the grant of higher pensions the retiring professors should be bound to hold conferences at the university and some courses so that the pupils should not be deprived of the aid of their masters. Other university faculties have abstained from voting for the proposal of restoring the age limit to the seventy-fifth year. The council of ministers has not yet come to a definite conclusion because of the divided opinions but has found a temporary solution by renewing for one year the teaching assignment of those professors who have completed their seventieth year.

Campaign Against Tuberculosis

The considerable increase in mortality from tuberculosis in Italy as a result of the war is receiving the attention of responsible circles concerned with the campaign against tuberculosis. The executive committee of the Italian Federation Against Tuberculosis held a meeting in Rome to examine the various antituberculosis institutions and see what may be expected from the support which the parliamentary medical group may give to the reform of the antituberculous organizations. The council decided that the first national congress for the campaign against tuberculosis should be held in Milan next year to celebrate the hundredth anniversary of Carlo Forlanini.

The regional antituberculosis association Lazio-Umbria also had a meeting at the Institute Carlo Forlanini in Rome with about thirty physicians and numerous officials attending. Professor Omodei-Zorini, director of the institute, read a paper on extrapleural pneumothorax, which is based on the biophysiologic concepts of Forlanini and which represents a form of treatment midway between intrapleural pneumothorax and thoracoplasty. The problems which result from the use of this method are the object of studies by Italian phthisiologists. Based on scientific and clinical proof, Professor Omodei-Zorini examined all the aspects of the new therapy and outlined the fundamental criteria and the clinical indications for extrapleural pneumothorax.

Professor Carlo Cattaneo reported on modern chemotherapy in the field of tuberculosis. In the discussion of Cattaneo's report action was agreed on against those who were publishing miraculous notes in the field of antituberculous therapy. Professor Nello Montanini reported on the formation of interbronchial anastomosis and presented a new concept of the pulmonary circulation of the air which was based on the results of a personal study.

A center of applied psychology was inaugurated at the Forlanini Institute for the rehabilitation of those who have been discharged from sanatoriums and for facilitating the readjustment to work in every field by ensuring postsanatorium care for them. The inaugurating ceremony was attended by Hon. Dr. Gasperi, president of the Council of Ministers, who expressed the interest of the government in the problem.

Congress of Psychoanalysts

The first congress of Italian psychoanalysts was held in Rome. Professor Servadio paid tribute to Sigmund Freud. Papers then were read by a number of investigators.

Flescher, who many times previously had applied the method of psychoanalytic research to the phenomena of politics, reported a study on mass psychology. In contrast to Freud, who believed that sublimated erotic causes may be considered as the main motive which induces the individual to gregariousness, the speaker attributed this phenomenon rather to fear and to the need for protection. The projection of the superego, in the figure of the leader, a phenomenon which causes a moral involution of the masses returning to an infantile phase, may be considered as a consecutive phenomenon. Next to the moral regression of the masses due to the phenomenon of collectivization, Flescher furnished evidence of the moral involution which is frequently due to methods used by their leaders, who are the symbols of the individual superego.

Perotti analyzed several patients who presented anguish and fear of Communism; he observed that in reality these patients were afraid of the annihilation of their proper ego in front of the feared irruption of the sexual and aggressive instincts, i. e. of the id.

Di Palma spoke on psychoanalytic technics; he suggested that in the diagnosis of mental infirmity which is accessible to psychotherapy (as an example, the obsessional neuroses, the hysteric phobia) one should differentiate the neuroses of transfer from the disturbances of character due to lesions of the superego during childhood. Pardi discussed the relationship between psychoanalysis and the study of the behavior of animals.

Servadio discussed revision of the concept of the Oedipus complex; in his opinion and in that of many other psychoanalysts, this concept should be modified and extended to object relationship also in earliest infancy.

Merloni discussed the affective bases of punishment and of the psychology of judges. The judges, who are bound to pass an objective and rational sentence on the defendant, may often act under the impulse of the irrational instincts which determine the feeling of punishment in other human beings, i. e. vengeance against the one who offends society and expiation on the part of one who allows the irruption of the instincts of the id. The speaker is convinced that conscience can not be gained from irrational motives which are based actually on punishment and that true justice cannot result from this type of psychology of the judge.

Health Referendum

The high commissioner for public health has named a committee for the study of health reforms in Italy, and three representatives of the medical parliamentary group are members of this committee. Prior to the advancement of concrete proposals for modification of the health law the medical parliamentary group submitted a referendum to all Italian physicians on the principal problems of a health character. The items to be considered are health reorganization of the state; reform of medical studies according to medical progress and the health needs of the country; reports of the medical profession and of the mayoralties; reports of clinics and of hospitals; charity funds; mutual insurance; the duties of the physician employed by the community to give medical assistance gratuitously to the poor; pensions of health personnel; occupational diseases; social diseases; problems of maternity and of infants; medical specialties; the auxiliary arts of medicine; various problems.

BRAZIL

(From Our Regular Correspondent)

SÃO PAULO, Feb. 16, 1947.

Anesthesia in Cesarean Section

A review of 559 cases of anesthesia in cesarean sections performed in the obstetric ward of the University of São Paulo Faculty of Medicine was made by Drs. B. Neme and Jutahy Esteves of the service of Professor Raul Briquet. Spinal anesthesia was used in 74.9 per cent, inhalation in 16.8 per cent, peridural in 2.9 per cent, sacral in 0.5 per cent and intravenous in 0.3 per cent. Pointing out the depressive action of analgesic drugs and anesthetic gases, Drs. Neme and Jutahy stated that a higher incidence of resuscitation is encountered after inhalation anesthesia than after spinal block, 15:6, in spite of a larger number of serious cases included in this group. To reduce immediate accidents and complications, the death rate (0.71 per cent) and hypotensive states (2.3 per cent) spinal anesthesia should be administered only by the trained anesthetist. Complementary anesthesia was necessary in 6.9 per cent of spinal, 15.3 per cent of epidural, 31.2 per cent of local and 100 per cent of venous anesthesias. According to Drs. Neme and Jutahy the danger of spinal block is highly overrated, as it was used in the hypertensive syndrome (65.4 per cent), placenta previa (66⅔ per cent), abruptio placentae (47.6 per cent) and heart trouble (42.8 per cent). However, spinal block is no longer used in hypertensive conditions or in toxic abruptio placenta. In the obstetric clinic where these figures were obtained spinal block is favored, providing good uterine retraction, excellent abdominal relaxation and almost complete atoxicity in addition to being harmless to mother and child.

The Clinical Forms of Amebiasis

Drs. F. Cintra do Prado and F. Figliolini, professors of the Escola Paulista de Medicina, São Paulo, describe the clinical forms of amebiasis and point out their respective frequency, based on 500 cases. The acute dysenteric form represented the beginning of amebiasis in only 15 per cent of the cases. In the remaining 85 per cent the illness developed in a slow and insidious manner; when the patients started attending the clinic the amebiasis had already become chronic, and it was often impossible to determine the exact time it began.

They divided the chronic forms of amebiasis into intestinal (80 per cent), paraintestinal (10 per cent) and mixed (10 per cent). They found that in the intestinal forms the clinical characteristics were obstipation (50 per cent of the patients), diarrhea (25 per cent), chronic dysentery (10 per cent) or periodic dysentery (15 per cent). In the paraintestinal chronic forms certain symptoms surpassed in importance the complaints concerning the intestine; in this group of patients a predominance of hepatobilious symptoms (50 per cent) or of psychoneurotic reactions (30 per cent) or of nutritive disturbances (20 per cent) was observed. The symptomatology was complex, without any predominance of intestinal or paraintestinal characteristics, in the mixed forms.

Curare

Drs. João S. Campos and Oswaldo V. Brazil report the use of curare and a curare substitute, bebeerine dimethylether methochloride, in the prevention of traumatic complications in convulsive shock therapy and in the treatment of spastic syndromes. Both the curare used and the bebeerine derivative showed a pure curarizing action. Side effects (such as cephalalgia, blood pressure depression and bronchial spasm) evoked by some curares and curarine were absent. Electrocardiograms were not altered of 4 patients during curarization with bebeerine dimethylether methochloride. For excessive curarization the authors suggest the intravenous injection of neostigmine. Thirty patients were given 239 shocks (electrical and metrazol shocks) with preliminary curarization as convulsive agents. Traumatic complications were not observed. Muscular pains were also prevented.

Drs. Campos and Brazil also found that rigidity and contractures from pyramidal and extrapyramidal syndromes could be removed or attenuated by curare or the bebeerine derivative in doses that did not prevent voluntary motility. Their action was of short duration (two or three hours), but in some cases improvement in the spasticity was still present twenty-four to forty-eight hours later.

Bebeerine dimethylether methochloride was used with good results in 2 cases of tetanus. The trismus, opistotonos and convulsive seizures could be suppressed; a two or three hour period of muscular relaxation followed the injection of the bebeerine derivative. Bennett's opinion that curare therapy offers more possibilities than sedative therapy in controlling tetanic convulsion is shared by Drs. Campos and Brazil.

The authors discuss the advantages resulting from the use of a chemically defined and strongly curarizing compound, bebeerine dimethylether methochloride, instead of curare, a mixture of variable composition, strength and origin.

Protective Antibodies Against Human Epidemic Influenza

Dr. Lucas Assumpção reports a study of protective antibodies against human epidemic influenza A virus (W. S. strain) in the serums of normal adults and children living in the city of São Paulo. None had a preceding clinical history of recent influenza or febrile cold. The protection experiments were made with Swiss mice. In the serum of children between 1 and 3 years of age the protection experiments were negative even when pure serum was used. With the adult serums 82.9 per cent were positive and 17.1 per cent negative.

The high percentage of individuals with antibodies against human epidemic influenza A virus (W. S.) proves that the influenza type caused by this virus is common in São Paulo. Protection experiments are now in progress with epidemic influenza B virus.

BUENOS AIRES

(From Our Regular Correspondent)

Dec. 6, 1946.

Medical Delegation Visits Buenos Aires

A group from Brazil, with Dr. Antonio Austregésilo as president, and two hundred and fifty delegates recently came to Buenos Aires with the representation of their government to pay a visit to the Argentinean members of the medical profession as represented in the Pan American Medical Congress, which was held in Rio de Janeiro. The delegation remained in Argentina ten days. The government of Argentina and members of the medical profession prepared receptions and medical meetings in honor of the delegates. Dr. Aloysio de Castro, past president of the Academia de Medicina de Rio de Janeiro, addressed the Academia de Medicina of Buenos Aires on the "project for a treaty of South American pathology," which was moved by Dr. Americo Ricaldoni of Uruguay in 1917 and approved by the faculties of medicine of Argentina, Brazil and Uruguay but which has not as yet been put into effect. Dr. Aráoz de Alfaro, the president of the Academia Nacional de Medicina of Buenos Aires answered that he considered this motion of great South American interest.

Geriatrics

A course in geriatrics recently given at the Hospital Británico, under the auspices of the Junta Argentina para el Estudio del Envejecer, included the following lectures: Dr. B. A. Houssay, physiology of old age; Dr. E. B. del Castillo, endocrinology in old age; Dr. A. C. Taquini, geriatrics of cardiovascular system; Drs. A. Casanegra and C. A. Cardini, geriatrics of respiratory and gastrointestinal systems, respectively; Dr. F. E. Krapf, neuropsychiatry in old age; Dr. D. del Valle, geriatrics and surgery, and Dr. A. Trabucco, urogenitary surgery in the old.

Medical Protection of Natives

A committee for the preparation of a Sanitary Census of natives to improve the medicosocial aid given to natives and mestizos was recently appointed through a special decree. The basis of the decree shows that the Secretariate of Public Health will give the natives and mestizos (numbering about 150,000 and 400,000, respectively) the benefits of public hygiene and medicine in accordance with the actual progress in medicine and hygiene.

Public Health

The 1946 budget of the Secretariat of Public Health is fixed at 61,798,675 Argentine pesos (about $15,500,000) of which 21,542,200 pesos is for salaries and 40,256,475 for other expenses.

The Secretariate of Public Health recently created laboratories for studies on yellow fever at the Instituto Bacteriológico Dr. Carlos G. Malbran and the Escuela de Lucha Antiestegómica in Santiago del Estero city.

Personals

Drs. Egidio S. Mazzei and Taylor Gorostiaga of Buenos Aires and Elyeser Magalhaes of Rio de Janeiro were awarded the premio Alvarenga by the Academia Nacional de Medicina del Brazil for their work on "Pulmonary Embolism." The experimental part of this work was carried on at the Instituto de Investigaciones of the Academia Nacional de Medicina of Buenos Aires, of which Dr. Mariano R. Castex is the head.

Drs. Tejerina Fotheringham, Oscar Cames, Juan Asugasti, Fernando Noguera and Oscar Maritofi, all of Argentina, were recently appointed honorary members of the Academia Peruana de Cirugía.

Dr. Mariano R. Castex was recently invited by the Oxford and Paris Universities to lecture there. He is now visiting in England and France.

Bureau of Investigation

MISBRANDED PRODUCTS

Abstracts of Notices of Judgment Issued by the Food and Drug Administration of the Federal Security Agency

[EDITORIAL NOTE.—These Notices of Judgment are issued under the Food, Drug and Cosmetic Act, and in cases in which they refer to drugs and devices they are designated D. D. N. J. and foods, F. N. J. The abstracts that follow are given in the briefest possible form: (1) the name of the product; (2) the name of the manufacturer, shipper or consigner; (3) the date of shipment; (4) the composition; (5) the reason for the charge of misbranding, and (6) the date of issuance of the Notice of Judgment—which is considerably later than the date of the seizure of the product and somewhat later than the conclusion of the case by the Food and Drug Administration.]

Car-Bo-Ak.—John L. Van Houten, Temple City, Calif., and Brunswig Drug Company, Los Angeles. Shipped Nov. 23, 1942. Composition: essentially water, alcohol, and extracts of plant materials, including licorice. Misbranded because falsely represented on label as an alterative, a blood tonic and a relief for rheumatic conditions, improper elimination, autointoxication and skin disorders such as scrofula, carbuncles, boils, styes and acne.—[*D. D. N. J., F. D. C. 1189; June 1945.*]

Citra Nesla.—Monarch Products Company, Los Angeles. Shipped between June 5 and July 6, 1943. Composition: an effervescent solution containing sodium phosphate, sugar, and a citrate. Misbranded because it was simply an imitation of another drug, citrate of magnesia, and because label did not accurately declare the quantity of contents, since the amount was short of the 12 fluid ounces declared on the label.—[*D. D. N. J., F. D. C. 1190; June 1945.*]

Dimels.—Jones-Hague, Inc., McKeesport, Pa. Shipped March 11, 1943. Composition: capsules each containing about 5 grains of a mixture of dried, powdered animal material and kaolin (China clay). The animal material apparently was of a glandular nature, such as pancreas, and contained a small amount of insulin and a starch-splitting enzyme equivalent to ½ of 1 per cent of pancreatin. Misbranded because insulin was not obtained from a batch for which a certificate or release had been issued, as required by law; also misbranded because label statement, "Each capsule contains Hormone Complexes as found in Isles Langerhans" was misleading, in that recommended dosage would not produce the well-known effects of the hormones found in the islands of Langerhans. Further misbranded because falsely represented as useful in treating incipient diabetes.—[*D. D. N. J., F. D. C. 1203; June 1945.*]

Estrovin in Oil.—Adson-Intrasol Laboratories, Inc., New York. Shipped Jan. 28 and March 11, 1942. Adulterated and misbranded because label falsely represented product to contain 5,000 International units of estrogenic ovarian follicular hormones per cubic centimeter, whereas it contained only 1,100 units of these.—[*D. D. N. J., F. D. C. 818, December 1943; and D. D. N. J., F. D. C. 1209, June 1945.*]

Helping Hand Laxative Tonic.—National Medicine Company, Nashville, Tenn. Shipped June 24, 1943. Composition: essentially epsom salt, iron and ammonium citrate, and extracts of plant drugs, including laxative and bitter substances, with a sugar, a benzoate, alcohol and water. Misbranded because falsely represented to be a tonic, to contain glycerin and to have iron and ammonium citrate as active ingredients, and because label did not warn that the product, a laxative, should not be used continually. —[*D. D. N. J., F. D. C. 1204; June 1945.*]

Hi-Lo Tablets.—Hi-Lo Products Company, St. Louis. Shipped April 20, 1943. Composition: essentially dried powdered yeast. Misbranded because carton and bottle labels and accompanying circulars (which carried name "Hi-Lo Anti-Gray Hair Vitamin Tablets—Vitamin B Complex Plus") falsely represented that this calcium pantothenate product would restore natural color to gray hair or prevent graying of it and correct or prevent nervousness, headache, dizziness, rapid heartbeat and numbness of feet and ankles.—[*D. D. N. J., F. D. C. 1244; June 1945.*] Also misbranded under provisions of the law applicable to foods. as reported in *F. N. J. 7344.*

Himrod's Asthma Powder.—Himrod Manufacturing Company, Hoboken, N. J. Shipped Oct. 8 and Nov. 14, 1941. Composition: essentially a mixture of stramonium and potassium nitrate. Misbranded because falsely represented as a treatment for asthma, whereas it was merely a palliative for the acute temporary manifestations of that disease; also misbranded because label gave false impression that the mixture would relieve paroxysms of asthma and hay fever and was a proper treatment for these conditions.—[*D. D. N. J., F. D. C. 1187; June 1945.*]

Imported Sea Vegetables Vitaminized with Added Vitamin A.—Mineralized Foods, Inc., Baltimore. Shipped between Feb. 17, 1942, and Jan. 23, 1943. Composition: dried seaweed. Misbranded because label falsely represented it as supplying mineral and vitamin deficiencies which would cause sinus disorders, colds, apoplexy and some other things.—[*D. D. N. J., F. D. C. 1246; June 1945.*] Also misbranded under provisions of the law applicable to foods, as reported in *F. N. J. 7345.*

Jayne's Vermifuge.—Dr. D. Jayne and Son, Inc., Philadelphia. Shipped Dec. 18, 1943. Composition: essentially extracts of plant drugs and a small amount of potassium carbonate, with sugar, alcohol and water, flavored with peppermint oil. Misbranded because falsely represented to remove large roundworms from children and adults, whereas tests on humans and laboratory animals showed that it did not do this.—[*D. D. N. J., F. D. C. 1237; June 1945.*]

Kalseom Tablets.—Mineralized Foods, Inc., Baltimore. Shipped between Feb. 17, 1942, and Jan. 23, 1943. Composition: claimed to consist of imported variety of sea vegetables, with bone calcium phosphate fortified with vitamins C and D. Misbranded because falsely represented to correct mineral deficiency which results in tuberculosis, asthma, poor teeth, brittle fingernails and other disorders.—[*D. D. N. J., F. D. C. 1246; June 1945.*] Also misbranded under provisions of the law applicable to foods, as reported in *F. N. J. 7345.*

Nuxated Iron.—Dae Health Laboratories, Stamford, Conn. Shipped Jan. 17, 1944. Composition: ferrous sulfate (64 milligrams per tablet), strychnine, compounds of calcium, magnesium and sodium, including carbonates and glycerophosphates and aromatic elements. Misbranded because label falsely represented product as an adequate treatment for run-down conditions and iron deficiency.—[*D. D. N. J., F. D. C. 1247; June 1945.*]

Opera Tablets.—Goodness Bros. Co., Webster, Mass. Shipped Sept. 25, 1943. Composition: a mixture of powdered plant drugs, including buchu, aloe, gamboge, capsicum and ginger. Misbranded because falsely represented as an effective treatment for a wide variety of disorders, including skin diseases, obesity, blood poisoning, fainting spells, dyspepsia, dropsy, anemia, gallstones, epilepsy, appendicitis and melancholia; further misbranded because label did not bear common or usual name of each active ingredient.—[*D. D. N. J., F. D. C. 1188; June 1945.*]

Schaffner's "Little Doc" Jr. First Aid Kit.—Gus. J. Schaffner Company, Avalon, Pa. Shipped Oct. 18, 1943. Adulterated and misbranded because the absorbent cotton in the kit was labeled "Sterilized," whereas it was not sterile, according to the standard of the United States Pharmacopeia. —[*D. D. N. J., F. D. C. 1224; June 1945.*]

Sea-Sol.—Mineralized Foods, Inc., Baltimore. Shipped between Feb. 17, 1942, and Jan. 23, 1943. Composition: soy beans, dried seaweed and sugar, yielding phosphorus, iron and iodine. Misbranded because falsely represented to prevent or correct shortness of breath, rapid heart palpitation, fatigue, stomach disturbances, iron deficiency, beri beri, arthritis and many other things.—[*D. D. N. J., F. D. C. 1246; June 1945.*] Also misbranded under provisions of the law applicable to foods, as reported in *F. N. J. 7345.*

Sea Vegecene.—Mineralized Foods, Inc., Baltimore. Shipped between Feb. 17, 1942, and Jan. 23, 1943. Composition: essentially dried and powdered seaweed containing various amounts of iodine, iron and phosphorus. Misbranded because label falsely represented that product has nutritional significance because of these substances and others not designated.—[*D. D. N. J., F. D. C. 1246; June 1945.*] Also misbranded under provisions of the law applicable to foods, as reported in *F. N. J. 7345.*

Sea-V-Aid.—Mineralized Foods, Inc., Baltimore. Shipped between Feb. 17, 1942, and Jan. 23, 1943. Composition: yeast and vegetable tissue, including seaweed, with other inorganic constituents, such as iodine. Misbranded because misrepresented as having nutritional value due to mineral content, and as being a treatment for unsteady nerves, premature aging, arteriosclerosis, apoplexy, pellagra and some other disorders.—[*D. D. N. J., F. D. C. 1246; June 1945.*] Also misbranded under provisions of the law applicable to foods, as reported in *F. N. J. 7345.*

Sea-Vo-Kra.—Mineralized Foods, Inc., Baltimore. Shipped between Feb. 17, 1942, and Jan. 23, 1943. Composition: powdered okra and dried seaweed, with other inorganic constituents, including iodine. Misbranded because label falsely represented it as a source of food minerals and vitamins A, B, C and D and a remedy for stomach ulcer.—[*D. D. N. J., F. D. C. 1246; June 1945.*] Also misbranded under provisions of the law applicable to foods, as reported in *F. N. J. 7345.*

Sodeom.—Mineralized Foods, Inc., Baltimore. Shipped between Feb. 17, 1942, and Jan. 23, 1943. Composition: dried powdered seaweed, calcium phosphate, calcium carbonate and starch, with iodine and other inorganic constituents, unnamed. Misbranded because falsely represented as to value in treating and preventing arthritis, kidney stones, rheumatic fever, premature aging and some other ailments.—[*D. D. N. J., F. D. C. 1246; June 1945.*] Also misbranded under provisions of the law applicable to foods, as reported in *F. N. J. 7345.*

Stumicaid.—Hoobler & Hazel Laboratory, Dayton, Ohio. Shipped Feb. 25, 1943. Chiefly organic protein material (not identified), with a small amount of plant substance, including anise, and a laxative such as senna. Misbranded because label falsely represented product as a remedy for most stomach ailments.—[*D. D. N. J., F. D. C. 1229; June 1945.*]

West's Imported Sea Vegetable Tablets.—Mineralized Foods, Inc., Baltimore. Shipped between Feb. 17, 1942, and Jan. 23, 1943. Composition: seaweed, representing, per tablet, various quantities of iodine, calcium, magnesium, phosphorus and iron. Misbranded because label falsely represented product as supplying deficient mineral elements in diet which cause arteriosclerosis, apoplexy, high blood pressure and many other disorders. —[*D. D. N. J., F. D. C. 1246; June 1945.*] Also misbranded under provisions of the law applicable to foods, as reported in *F. N. J. 7345.*

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

NATIONAL BOARD OF MEDICAL EXAMINERS EXAMINING BOARDS IN SPECIALTIES

Examinations of the National Board of Medical Examiners and the Examining Boards in Specialties were published in THE JOURNAL, March 15, page 801.

BOARDS OF MEDICAL EXAMINERS

ALABAMA: Montgomery, June 24-26. Sec., Dr. D. G. Gill, 519 Dexter Ave., Montgomery 4.

ARIZONA: * *Examination.* Phoenix, April 1-2. *Endorsement.* Phoenix, April 5. Sec., Dr. J. H. Patterson, 826 Security Bldg., Phoenix.

ARKANSAS: * *Medical. Examination.* June 5-6. Sec., Medical Board of the Arkansas Medical Society, Dr. L. J. Kosminsky, Texarkana. *Eclectic. Little Rock, June 5. Sec., Dr. C. H. Young, 1415 Main St., Little Rock.*

CALIFORNIA: *Written.* San Francisco, July 7-10. *Oral.* San Francisco, May 10-11. *Oral Clinical Examination for Foreign Medical Graduates.* San Francisco, June 21. Sec., Dr. Frederick N. Scatena, 1020 N. St., Sacramento 14.

DELAWARE: *Examination.* Dover, July 8-10. *Endorsement.* Dover, July 15. Sec., Medical Council of Delaware, Dr. J. S. McDaniel, 229 S. State St., Dover.

FLORIDA: * Jacksonville, June 24-25. Sec., Dr. Harold D. Van Schaick, 2736 S. W. Seventh Ave., Miami 36.

GEORGIA: Atlanta and Augusta, March 26-27. Sec., State Examining Boards, Mr. R. C. Coleman, 111 State Capitol, Atlanta 3.

IDAHO: Boise, July 14-16. Sec., Bureau of Occupational Licenses, Dr. S. M. Poindexter, Eastman Bldg., Boise.

ILLINOIS: Chicago, April 1-3. Supt. of Registration, Department of Registration & Education, Mr. *Philip Harman, Springfield.*

INDIANA: *Examination.* Indianapolis, June. Exec. Sec., Board of Medical Registration and Examination, Miss Ruth V. Kirk, 627 K. of P. Bldg., Indianapolis.

KANSAS: *Examination.* Kansas City, March 25-26. Sec., Board of Medical Registration and Examination, Dr. J. F. Hassig, 905 N. Seventh St., Kansas City 10.

KENTUCKY: Louisville, Sept. 22-24. Sec., State Board of Health, Dr. *P. E. Blackerby, 620 S. Third St., Louisville 2.*

MARYLAND: *Medical Examination.* Baltimore, June 17-20. Sec., Dr. E. H. Kloman, 1215 Cathedral St., Baltimore. *Homeopathic.* Baltimore, *June 10-11. Sec., Dr. J. A. Evans, 612 W. 40th St., Baltimore.*

MICHIGAN: * *Examination.* Detroit, June 16-18. Sec., Board of Registration in Medicine, Dr. J. E. McIntyre, 100 W. Allegan St., Lansing 8.

MINNESOTA: * Minneapolis, April 15-17. Sec., Dr. J. F. Du Bois, 230 Lowry Medical Arts Bldg., St. Paul.

MISSISSIPPI: Jackson, June 23-24. Asst. Sec., State Board of Health, Dr. R. N. Whitfield, Jackson 113.

MONTANA: Helena, April 1-2. Sec., Dr. O. G. Klein, First National Bank Bldg., Helena.

NEBRASKA: * *Examination.* Omaha, June. Dir., Bureau of Examining Boards, Mr. Oscar F. Humble, State Capitol Bldg., Lincoln.

NEVADA: *Examination. Carson City, May 5. Sec., Dr. G. H. Ross,* 215 N. Carson St., Carson City.

NEW JERSEY: Trenton, June 17-18. Sec., Dr. E. S. Hallinger, 28 W. State St., Trenton.

NEW MEXICO: * Santa Fe, April 7-8. Sec., Dr. LeGrand Ward, 141 Palace Ave., Santa Fe.

NORTH CAROLINA: *Endorsement.* Winston-Salem, April 30, June 24. *Examination.* Raleigh, June 23-26. Acting Sec., Mrs. L. McNeill, 226 Hillsboro St., Raleigh.

NORTH DAKOTA: Grand Forks, July 1-4. Sec., Dr. G. M. Williamson, 4½ S. Third St., Grand Forks.

OHIO: *Examination. Columbus, June 17-20. Sec., Dr. H. M. Platter,* 21 W. Broad St., Columbus.

OREGON: * *Endorsement.* Portland, April 25-26. Exec. Sec., Miss L. M. Conlee, 608 Failing Bldg., Portland 4.

PENNSYLVANIA: Philadelphia and Pittsburgh, July. Acting Sec., Bureau of Professional Licensing, Department of Public Instruction, Mrs. M. G. Steiner, 351 Education Bldg., Harrisburg.

RHODE ISLAND: * Providence, April 3-4. Chief, Division of Examiners, Mr. Thomas B. Casey, 366 State Office Bldg., Providence.

SOUTH CAROLINA: Columbia, June 23-25. Sec., Dr. N. B. Heyward, 1329 Blanding St., Columbia.

SOUTH DAKOTA: * Pierre, July 15-16. Sec., Medical Licensure, State Board of Health, Dr. Gilbert Cottam, Capitol Bldg., Pierre.

TENNESSEE: * *Examination.* Memphis, March 26-27. Sec., Dr. H. W. Qualls, 130 Madison Ave., Memphis 3.

WEST VIRGINIA: *Charleston, March 31-April 2. Commissioner, Public* Health Council, Dr. N. H. Dyer, State Capitol, Charleston 5.

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* Basic Science Certificate required

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

ARIZONA: June 17. Sec., Mr. Francis A. Roy, Science Hall, University *of Arizona,* Tucson.

ARKANSAS: Little Rock, May 7. Sec., Mr. L. E. Gebauer, 701 Main Street, Little Rock.

COLORADO: Denver, June 4-5. Sec., Dr. Esther B. Starks, 1459 Ogden Street, Denver.

DISTRICT OF COLUMBIA: Washington, April 21-22. Sec., Commission on Licensure, Dr. G. C. Ruhland, 6150 E. Municipal Bldg., Washington 1.

FLORIDA: May 31. Final date for filing application is May 16. Sec., Dr. M. W. Emmel, University of Florida, Gainesville.

IOWA: Des Moines, April 8. Sec., Dr. Ben H. Peterson, Coe College, Cedar Rapids.

MICHIGAN: Ann Arbor and Detroit, May 9-10. Sec., Miss Eloise Lebeau, 101 N. Walnut St., Lansing.

MINNESOTA: Minneapolis, April 1-2. Sec., Dr. Raymond N. Bieter, 105 Millard Hall, University of Minnesota, Minneapolis 14.

NEBRASKA: Omaha, May 6-7. Dir., Bureau of Examining Boards, State Department of Health, Mr. O. F. Humble, 1009 State Capitol Bldg., Lincoln 9.

OREGON: June 7. Sec., Mr. C. D. Byrne, University of Oregon, Eugene.

SOUTH DAKOTA: Vermillion, June 6-7. Sec., Dr. G. M. Evans, Yankton.

TENNESSEE: Memphis & Nashville, March 24-25. Sec., Dr. O. W. Hyman, 874 Union Ave., Memphis.

WISCONSIN: Madison, April 12. Sec., Dr. William H. Barber, Scott & Watson Sts., Ripon.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Charitable Hospitals: Liability for Employment of Unlicensed Dentists.—The plaintiff sued for damages alleged to have been caused by the negligence of the defendant hospital in hiring an unlicensed dentist in its dental clinic. From a verdict and judgment for the plaintiff, the defendant appealed to the Supreme Court of Errors of Connecticut.

The plaintiff went to the defendant's dental clinic for treatment of a toothache and swollen jaw and was examined by Keller, a substitute dental intern employed by the defendant. The examination, and x-rays taken in connection with it, revealed a decayed and infected wisdom tooth on the left side of the plaintiff's upper jaw. Four days later this tooth was extracted by Keller, following which extraction the plaintiff suffered a fracture of the alveolar process and a postoperative abscess which necessitated nine days' hospitalization.

The defendant hospital, said the court, is a public institution which maintains a dental clinic under the direction of a Dr. Anderson. Keller, not yet a graduate dentist, had attended Tufts Dental College for a period of three and two-thirds years and had been hired as a substitute dental intern on the recommendation of Dr. Anderson and the college faculty. He was not yet licensed to practice dentistry in Connecticut and there was no evidence that he was registered to practice in a clinic in accordance with the Connecticut statutes. The plaintiff contended that the defendant was negligent in the selection of Keller and that this negligence, plus that of Keller, caused the plaintiff's injuries.

The Connecticut statutes, said the Supreme Court, make it illegal for any person or corporation to employ an unlicensed dentist. When the legislature establishes a rule of conduct by statute, and its purpose in doing so is to protect others from injury, a violation of that rule of conduct constitutes negligence. Accordingly the court held that the defendant was guilty of corporate negligence in employing Keller.

Continuing, the court said that the general rule is that an employer is liable for the acts of an employee done in the course of his employment. In Connecticut, hospitals and other eleemosynary corporations are exempted from this rule when they have used due care in the selection of their employees. When, however, they fail to use due care in the selection of their employees, this exemption is no longer effective and the applicable principles of liability are those governing the ordinary relationship of master and servant. An essential element in such liability is the negligence of the employee. If the employee has not been negligent the employer is not liable. The court thus pointed out that principles governing malpractice are determinative of the question of Keller's negligence, the rule in this state being that no recovery may ordinarily be had in such cases unless expert testimony supporting the plaintiff's allegation of negligence somewhere appears. There is no such testimony in this case. On the contrary, the court concluded, all of the medical testimony was to the effect that the operation of the defendant's clinic in general and the treatment by Keller in particular were in accordance with standard practice or even better. The fact that the operation was followed by infection raises no presumption of want of proper care or skill. Since there was no evidence from which the jury reasonably could have concluded that Keller was negligent, the judgment was reversed and the cause remanded with directions to grant the defendant's motion to set aside the verdict.—*Haliburton v. General Hosp. Soc. of Connecticut, 48 A. (2d) 261 (Conn., 1946).*

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1937 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied with stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Heart Journal, St. Louis

32:679-832 (Dec.) 1946

*Esophageal Electrocardiogram in Arrhythmias and Tachycardias. S. Butterworth and C. A. Poindexter.—p. 681.
Anoxemia and Exercise Test in Diagnosis of Coronary Disease. G. Biörck.—p. 689.
Plasma Concentrations of Quinidine, with Particular Reference to Therapeutically Effective Levels in 2 Cases of Paroxysmal Nodal Tachycardia. A. F. Delevett and C. A. Poindexter.—p. 697.
Effects of Ingestion of Large Amounts of Sodium Chloride on Arterial and Venous Pressures of Normal Subjects. H. Grant and F. Reischsman.—p. 704.
Electrocardiographic Patterns in Penetrating Wounds of Heart. P. H. Noth.—p. 713.
*Clinical Evaluation of Powdered Human Blood Cells in Treatment of Ulcers of Extremities Associated with Vascular Disorders. M. W. Anderson, N. W. Barker and T. H. Seldon.—p. 754.
Studies on Vascularization of Aorta: I. Vascularization of Aorta in Normal Dog. J. G. Schlichter.—p. 770.

Esophageal Electrocardiogram.—It has been the practice of Butterworth and Poindexter to take esophageal electrocardiograms in all cases in which the P waves were not distinctly visible in any of the leads from the surface of the body. Esophageal electrodes may have a single terminal at the tip of the tube or may have several located at intervals near the tip. The technic of introducing the tube is exactly the same as for a stomach tube. The esophageal lead can be paired with any other lead, but the authors commonly use the left leg or preferably the indifferent electrode of Wilson. At the 55 cm. level the tip of the tube is usually in the stomach. A record is taken at this level, and the tube is then withdrawn in increments of 2 or 2.5 cm. to the 30 cm. level, which usually places the tip above the heart. Levels from 55 to 40 cm. are usually in close proximity to the diaphragmatic surface of the heart and accentuate the ventricular potentials, while those from the 40 to the 30 cm. levels usually overlie the auricles and accentuate the auricular potentials. Several electrocardiograms are reproduced, illustrating the value of the esophageal electrocardiogram in accurately diagnosing certain types of arrhythmia and tachycardia.

Powdered Human Blood Cells in Treatment of Ulcers of Extremities.—Anderson and his associates regard the topical application of powdered human blood cells in treating chronic ulcers of the extremities associated with vascular disease as one of several methods of bland and nonirritating local treatment available. In order to evaluate its effect, the authors have reviewed cases at the Mayo Clinic. In approximately one half in which both ischemic ulcers and stasis ulcers were treated with the powdered blood cells, healing was much accelerated. In the other half in which powdered blood cells were used, it is questionable whether healing occurred any more rapidly than it would have with other bland local applications. In a few cases less healing occurred or the treatment was not well tolerated. It is difficult to determine whether the favorable response occurs from partial desiccation, from some healing factor in the cells, from nutrition supplied by the crust or merely because the crust is protective and entirely nonirritating. Nevertheless it is encouraging to observe progress in the ulcers, with first a puckering of the surrounding skin, then a freshening and reddening of the gray, avascular base, and finally granulations with epithelium creeping in from the margins. Certain disadvantages of wet dressings, such as maceration of the skin and chilling, are avoided with this "dry" method of treatment.

American Journal of Clinical Pathology, Baltimore

16:737-808 (Dec.) 1946

Nutritional Aspects of Certain Endocrine Disturbances. G. R. Biskind and M. S. Biskind.—p. 737.
Further Notes on Pathology of Acute Epidemic Hepatitis and Homologous Serum Jaundice. D. A. Wood and M. B. Black.—p. 746.
*Pathogenesis of Acute Appendicitis. M. G. Bohrod.—p. 752.
*Pathogenesis of Erythroblastosis Fetalis: Statistical Evidence. A. S. Wiener.—p. 761.
False Positive Kahn Reactions: Loss of Titer on Storage of Serum in Ice Box. J. M. Lubitz.—p. 768.
Rare Malignant Tumors in Children. P. H. Hartz and A. van der Sar.—p. 776.
Periarteritis Nodosa in Granuloma of Unknown Etiology: Report of 2 Cases. T. Weinberg.—p. 784.
Large Hemangioma of Liver Successfully Removed Surgically: Report of Case. A. R. Peale and J. N. Coombs.—p. 792.
Large Ventricular Tumor of Ependymal Origin. P. A. Van Pernis.—p. 796.

Pathogenesis of Acute Appendicitis.—Bohrod shows that the two most generally accepted theories attempting to explain the genesis of acute appendicitis can be subsumed in one if it is postulated that (1) the attack of acute appendicitis follows obstruction of the appendix and (2) the most common cause of the obstruction is the lymphoid tissue of the appendix, a labile structure susceptible of rapid change under stimulation. The lymphoid tissue reaches its maximum development in the first decade of life. This tissue is better developed in the male than in the female. The muscularis does not develop fully until the second decade, and it is only at this time that the lumen becomes small. The relationship between the amount of lymphoid tissue and the size of the lumen represents the ability of the lymphoid structure to obstruct the lumen. This relationship correlates well with the characteristic age and sex distribution of acute appendicitis. The lymphoid tissue is susceptible of rapid response to internal stimuli and to environmental factors. This makes understandable the geographic distribution of acute appendicitis, the relationship of this disease to distant infections and the increase of its incidence in periods of climatic variabilty. Whatever the mechanism of its swelling, the lymphoid tissue causes appendicitis by obstructing the lumen of the appendix. Obstructions of the appendical lumen other than those due due to swollen lymphoid tissue are adequate causes of acute appendicitis but do not explain the greatest number of cases of this common disease.

Pathogenesis of Erythroblastosis Fetalis.—Wiener analyzed 97 families with erythroblastotic infants and fetuses from the standpoint of the quality of the Rh antibodies in the maternal serum and the nature of the clinical manifestations in the infants and fetuses. In 25 families, in which the maternal serum contained bivalent antibodies (agglutinins), 8 per cent of the fetuses or infants were stillborn, 28 per cent had congenital hemolytic anemia and 64 per cent had icterus gravis. In 57 families, in which the maternal serum contained univalent antibodies (blockers or glutinins), 43.9 per cent of the fetuses or infants were stillborn, 42.1 per cent had congenital hemolytic anemia and 14 per cent had icterus gravis. This confirms the author's theory of pathogenesis of erythroblastosis fetalis, under which potent univalent Rh antibodies would be expected to cause stillbirths, while potent bivalent Rh antibodies should give rise to icterus gravis. Congenital hemolytic anemia appears to be a milder manifestation of erythroblastosis and occurs when the maternal antibody titer is low in cases both with univalent and with bivalent antibodies. In 15 families, in which the maternal serum contained a mixture of univalent and bivalent Rh antibodies, the syndromes in erythroblastotic infants and fetuses were similar to those encountered in families with univalent antibodies alone. This confirms the hypothesis that univalent antibodies traverse the placenta more readily during pregnancy than do bivalent antibodies, so that the former take precedence over the latter when the two are present together in the maternal serum.

American Journal of Diseases of Children, Chicago

72:635-790 (Dec.) 1946

*Effect of Penicillin in Treatment of Infantile Congenital Syphilis: Further Observations. R. V. Platou, A. J. Hill Jr., N. R. Ingraham and others.—p. 635.

Parenteral Administration of Ammonium Chloride for Alkalosis of Congenital Hypertrophic Pyloric Stenosis: Preliminary Report. G. B. Forbes and Jane A. Erganian.—p. 649.

*Relative Frequency of "Subclinical" Poliomyelitis: Daily Temperature Studies on Intimate Contacts of Infectious Patients. A. E. Casey, W. I. Fishbein, I. Abrams and H. N. Bundesen.—p. 661.

*Anomalous Origin of Left Coronary Artery. R. A. Lyon, R. J. Johansmann and Katharine Dodd.—p. 675.

Staphylococcic (Suppurative) Pneumonia in Infancy and Childhood and Its Surgical Aspects. S. Blumenthal and H. Neuhof.—p. 691.

Auricular Flutter with Block in Children. B. Hoyer and R. A. Lyon. —p. 734.

Penicillin in Congenital Syphilis.—Platou and his associates find that 122 additional cases of manifest congenital syphilis in children under 2 years of age have been treated by the university groups at New Orleans, Philadelphia, Baltimore and Galveston. This brings the total number now suitable for analysis to 191. Penicillin appears to be the best agent for the treatment of infantile congenital syphilis. The total dosages employed have varied from 20,000 up to 150,000 units per kilogram of body weight. It is recommended that dosage schedules in excess of 40,000 units per kilogram be used and that treatment continue for sixty or more equal intramuscular injections given at three hour intervals. Schedules comprising 80,000 or more units per kilogram, divided into 120 equal intramuscular injections given every three hours night and day for a period of fifteen days, have not yet been evaluated. Reactions to therapy have appeared unimportant. Only a relatively small number of infants will demonstrate seronegativity during or soon after a single course of penicillin. The number of patients becoming seronegative increases with each month of observation for at least eighteen months. Periodic examinations are necessary to recognize the small number of serologic and clinical relapses which will require additional therapy. Deaths among these infants do not appear to be related to the use of penicillin.

Subclinical Poliomyelitis.—Casey and his associates say that in a study of poliomyelitis carried out in Chicago in the summer and fall of 1945 daily temperature determinations were made on a number of the most intimate child contacts of patients with poliomyelitis. As a control similar studies were made on noncontacts living in the same block as the patient and on control children of the same age living ten and fifty blocks distant. By this procedure many fevers were detected in children who had no complaints of illness. As many of these as could be persuaded were checked several weeks later by examination of the spinal fluid. This paper reports the incidence and clinical features of illnesses observed among these contact, noncontact and control children. The evidence, although scanty, is sufficient to indicate that perhaps 98 per cent of poliomyelitis is a mild, widespread, highly communicable disease of young children leaving no residual paralysis. Transient paralysis occurs in about 5 per cent of all cases and the meningitic form (nonparalytic but with stiff neck or stiff back, head drop and increased cells and protein in the spinal fluid in the first week) in about 14 per cent. The fatality rate seems not to exceed 0.7 per cent. Residual paralysis in poliomyelitis seems an infrequent complication, and perhaps not more than 1 child in 40 or 50 is so affected.

Anomalous Origin of Left Coronary Artery.—The histories of 2 infants with anomalous origin of the coronary arteries recorded by Lyon and his co-workers bring the total number of reported cases to 20. In both cases enlargement of the heart, persistent symptoms of respiratory distress and the inversion of the T waves in the first lead or in all leads of the electrocardiogram permitted a tentative clinical diagnosis of the nature of the cardiac disorder. Important abnormalities found, other than the origin of the left coronary artery from the pulmonary artery, were limited to the left ventricle, where there were endocardial fibrosis, degenerative changes of the myocardium with replacement by fibrous tissue, infarcts in the myocardium and in 1 case persistence of embryonic sinusoids.

American Journal of Medical Sciences, Philadelphia

212:641-768 (Dec.) 1946

*Effect of Di-Isopropyl-Fluorophosphate (DFP) on Patients with Myasthenia Gravis. J. H. Comroe Jr., J. Todd, G. D. Gammon and others. —p. 641.

*Clinical and Roentgenologic Aspects of Coccidioidomycosis. C. F. Sweigert, J. W. Turner and J. B. Gillespie.—p. 652.

*Penicillin Therapy in Pyogenic Dermatoses. J. G. Hopkins and H. Lawrence.—p. 674.

Electrocardiographic Phenomena Associated with Spontaneous Pneumothorax and Mediastinal Emphysema. D. Littmann.—p. 682.

Some Factors That Modify Effect of Trisodium Citrate on Absorption of Oral Penicillin. R. H. Broh-Kahn and R. F. Pedrick.—p. 691.

Effect of Antimony on Electrocardiogram. E. F. Schroeder, F. A. Rose and H. Most.—p. 697.

Thrombosis and Embolism of Pulmonary Vessels, with Special Reference to Pulmonary Vein Thrombosis. D. M. Spain and J. B. Moses. —p. 707.

Rheumatoid Arthritis: I. Introduction to Study of Its Pathogenesis. A. D. Wallis.—p. 713.

Id.: II. Nonspecific Serologic Reactions. A. D. Wallis.—p. 716.

Id.: III. Pneumococcus Antibodies. A. D. Wallis.—p. 718.

Changing Concepts in Mediterranean (Cooley's) Anemia. I. J. Wolman and B. Dickstein.—p. 723.

Ovarian Tumors. F. B. Block.—p. 738.

Di-Isopropyl-Fluorophosphate in Myasthenia Gravis.—According to Comroe and his associates di-isopropyl-fluorophosphate (DFP) is a compound which, although completely unrelated chemically to neostigmine, has been shown to produce inhibition of cholinesterase in serum, red cells, muscle and brain. The rates of restoration of these activities are slow following its administration and consequently its effects are far more prolonged than those of neostigmine or physostigmine. It was used in treating 7 patients with myasthenia gravis. Some patients were benefited, but in no case did the objective or subjective improvement following its use equal or exceed that produced by neostigmine. Attempts to give larger doses of the compound resulted in nausea and vomiting and symptoms referable to the central nervous system. Despite the fact that it lowered plasma cholinesterase to zero, it produced less improvement than did neostigmine. The potentialities of a drug for treating myasthenia gravis cannot be gaged by its effect on plasma cholinesterase. The compound may be utilized in nontoxic doses to obtain its prolonged effect at the same time that neostigmine is used to obtain its characteristically stronger action.

Clinical and Roentgenologic Aspects of Coccidioidomycosis.—Sweigert and his associates report 77 cases of coccidioidomycosis treated in a hospital and a study of clinical and roentgenographic material on approximately 200 additional patients observed in southern Arizona between August 1941 and August 1945. The fact that coccidioidomycotic cavities and nodules may persist for many months or several years must be taken into consideration in contemplated mass surveys of the chest. Three case histories illustrating different clinical patterns of disseminated coccidioidomycosis, 1 with apparent recovery from coccidioidal meningitis, are reported.

Penicillin in Pyogenic Dermatoses.—Hopkins and Lawrence made observations on 618 soldiers, of whom 211 were treated in a hospital and 407 in a dispensary. Local penicillin therapy was rapidly effective in the majority of cases of impetigo, ecthyma and the pyogenic complications of dermatophytosis. Intramuscular penicillin was effective in furunculosis and hidrosadenitis. One third of the cases of folliculitis of the beard cleared at least temporarily under penicillin. Concentrated local applications combined with intramuscular injections often appeared necessary. Secondary infections in eczematous dermatitis were controlled in 40 per cent of cases, but sensitization developed frequently after local therapy. Penicillin was seldom effective in seborrheic dermatitis, intertrigo, folliculitis of the trunk or extremities or acne.

American Journal of Ophthalmology, Cincinnati

29:1499-1636 (Dec.) 1946

Cytology of Conjunctival Exudates. P. Thygeson.—p. 1499.
Contributions to Surgery of Congenital Cataract: I. Modification of Discission in Preschool Age Group. W. F. Moncreiff.—p. 1513.
Electroencephalography and Ophthalmology. A. Callahan and F. C. Redlich.—p. 1522.
*Hereditary Nystagmus Occurring as Sex Linked Character Recessive in Female. C. W. Rucker.—p. 1534.
Influence of Barbiturate on Various Forms of Nystagmus. M. B. Bender and F. H. O'Brien.—p. 1541.
Pathologic Changes in Rabbit Eyes Resulting from Exposure to Liquid Nitrogen Mustards. W. O. LaMotte Jr. and I. H. Leopold.—p. 1553.
Effect of Oily Drops on Eyes Exposed to Mustard Vapor. G. I. Uhde and E. B. Dunphy.—p. 1562.
Seed Grafting of Conjunctiva in Treatment of Symblepharon. A. Hagedoorn.—p. 1568.
Implantation into Tenon's Capsule. S. A. Fox.—p. 1571.
Orbital Cellulitis Followed by Total Blindness. H. C. Donahue.—p. 1574.

Hereditary Nystagmus.—According to Rucker, hereditary nystagmus appears as a constant, horizontal, to and fro movement of the eyes, pendular in type, or small excursion on forward gaze and coarser on looking to the sides. Nystagmus is said to be inherited in any one of several different ways—as a mendelian dominant or recessive character or as a sex linked character. The propositus of the family reviewed in this report was a 7 year old boy whose father brought him to the clinic to have an operation performed on his eyes to steady them. The family had 231 members in six generations. The 21 members who had nystagmus were males, and all inherited it through females who themselves were not affected. In a number of instances the gene passed through a chain of several females before it became evident in a male descendant. In no case has a male transmitted the defect to his son. All descendants of nonaffected males are free from the defect. In this family the character is sex linked and without exception has been recessive in the females.

Am. J. Roentgenol. & Rad. Therapy, Springfield, Ill.

56:683-816 (Dec.) 1946

Radiology in the Atomic Age. R. C. Beeler.—p. 683.
Some Observations Concerning Ewing's Tumor Seen in Army General Hospital. G. W. Heublein, S. E. Moolten and J. C. Bell.—p. 688.
Fibrous Dysplasia of Bone. A. W. Mann, O. Eitzen and E. P. McNamee.—p. 707.
Para-Articular Calcification in Lower Extremities of Paraplegic Patients. W. C. Ward.—p. 712.
Revised "Ossification" Index" for Detection of Endocrine Disorders in Childhood. D. W. Leonard.—p. 716.
Roentgen and Cardiac Manifestations of Funnel Chest. J. G. Teplick and E. H. Drake.—p. 721.
Technic of Roentgenologic Demonstration of Pulmonary Infarcts. L. L. Robbins.—p. 736.
Simulated Dextrocardia Associated with Bronchiectasis: Report of Case. S. A. Leader.—p. 743.
Case of Diverticulosis of Vermiform Appendix Roentgenographically Demonstrated. J. H. Gilmore and T. K. Mahan.—p. 748.
Cylindrical Radium Applicator for Treatment of Surface Vaginal Lesions. E. F. Focht, L. D. Marinelli and G. H. Twombly.—p. 751.
*Ionization Measurements with Bone Chambers and Their Application to Radiation Therapy. K. W. Stenstrom and J. F. Marvin.—p. 759.
Absorption Measurements for Broad Beams of 1 and 2 Megavolt Roentgen Rays. G. Singer, C. B. Braestrup and H. O. Wyckoff.—p. 771.

Ionization Measurements with Bone Chambers.—Stenstrom and Marvin made measurements with ionization chambers constructed of bone in order to obtain some information on the total ionization in bone in connection with roentgen therapy. Maximum values of over 400 per cent (bone compared to lucite) were observed for 100 kilovolts (peak) with a half value layer of 0.3 mm. of copper, and of about 380 per cent for 140 kilovolt peak with a half value layer of 0.35 mm. of copper. Values were lower for higher voltages and greater filtration. Measurements taken with a water phantom indicated a greater amount of ionization in bone (up to 5 cm. depth in the phantom) when 140 kilovolt peak was used, than was observed at any other voltage. This may have direct application in therapy as 140 kilovolt peak may be preferred when ionization in bone is desirable and used with caution when bone damage is to be avoided.

American Practitioner, Philadelphia

1:169-226 (Dec.) 1946

Treatment of Acute Rheumatic Fever. T. N. Harris.—p. 169.
Interviewing Technics. J. M. Lyon.—p. 174.
Folic Acid in Treatment of Macrocytic Anemias. R. W. Heinle.—p. 179.
Initial Care of Casualties. G. M. Morrison.—p. 183.
Symptomatic Treatment of Bronchial Asthma in Infancy and Childhood. J. Glaser.—p. 185.
*Neurologic Manifestations in Preicteric Phase of Infectious Hepatitis. L. Weinstein and W. T. Davison.—p. 191.
Treatment of Functional Uterine Hemorrhage. E. L. Williams.—p. 198.
Rheumatic Fever—Preventive Aspects. H. H. Riecker.—p. 203.
Proctologic Considerations of Interest to Internists. V. T. Young.—p. 207.
What Physician Should Know About Foreign Bodies That Have Been Swallowed. P. P. Vinson.—p. 211.

Neurologic Manifestations in Infectious Hepatitis.—Weinstein and Davison describe 4 cases of infectious hepatitis with manifestations of severe involvement of the nervous system in the preicteric phase of the disease. Headache, rigidity of the neck, increase in the number of cells in the spinal fluid, pain in the eyes, photophobia, blurred vision, numbness of a hand, lethargy, positive Kernig's signs, hypoactive deep tendon reflexes, absence of the superficial ones and a paralyzed bladder were the symptoms presented by these patients. If the attacks occur during the time of the year when poliomyelitis is prevalent, as did the ones reported in this paper, a diagnosis of acute anterior poliomyelitis may be made. A history of contact with a case of infectious hepatitis may be very helpful in suggesting this disease as the cause for the neurologic signs and symptoms. In cases of so-called nonicteric infectious hepatitis the etiology of the neurologic signs may be completely overlooked unless chemical studies of the blood and urine are carried out.

American Review of Tuberculosis, New York

54:325-460 (Oct.-Nov.) 1946

BCG Vaccination in Hospitals and Sanatoriums of Saskatchewan: Study Carried Out by National Research Council of Canada. R. G. Ferguson.—p. 325.
Psychologic Moment in Treatment of Tuberculosis. J. D. Riley.—p. 340.
Importance of Postsanatorium Care of Tuberculous. F. H. Heise.—p. 344.
*Pathogenesis of Pleurisy with Effusion: Clinical Epidemiologic and Follow-Up Study of 190 Cases. B. C. Thompson.—p. 349.
Multiple Infections in Human Tuberculosis. A. Westergren.—p. 364.
Thoracoplasty for Pulmonary Tuberculosis: Observations on 32 Patients in Older Age Group. P. E. Zuelke, W. E. Adams and R. G. Bloch.—p. 368.
*Artificial Pneumothorax and Pneumonolysis: Results in 100 Patients. W. J. Branday.—p. 376.
Tuberculosis Survey Among Chinese Students. R. Tak Eng.—p. 385.
*Tuberculosis in Captive Wild Birds: Decrease of Its Incidence Following Change in Diets. H. L. Ratcliffe.—p. 389.
Autolytic Tuberculin: Its Properties and Significance of Its Mode of Formation. H. J. Corper and C. Clark.—p. 401.
Solitary Pulmonary Tumor: Cyst-like Tumors Associated with Anomalies of Ribs. E. Wayburn.—p. 413.
Broncholithiasis. D. W. Zahn.—p. 418.

Pathogenesis of Pleurisy with Effusion.—Thompson reviews observations on 190 cases of simple pleurisy with effusion. There was a high incidence of preceding or concurrent intrathoracic lesions typical of primary tuberculosis, confirmed sometimes by the later development of calcification. Cavity formation occurred in 5 cases presenting these lesions. The lesions were glandular or parenchymal; they were not always on the same side as the effusion. The incidence both of primary type lesions and of pleural effusion was higher on the right side than on the left. Pleurisy with effusion was found predominantly in the years of late adolescence and young adult life. There was an excess of males over females confined to the 15 to 19 year group. The follow-up revealed subsequent tuberculosis in 12 per cent of the total number of patients within the first year, in 8 per cent of the remainder within the second year and in a total of 25 per cent within five years. No case occurred after five years. In 15 per cent of these cases the first evidence of disease was extrapulmonary. The death rate for the 190 patients over the five year period was 3.5 per cent.

Results of Artificial Pneumothorax and Pneumonolysis.—Branday presents observations on 100 patients who were treated by artificial pneumothorax and in whom section of adhesions was required in order to effect efficient collapse. All were ambulant during the greater part of treatment; few stayed in the hospital more than a few days or weeks of operation, and nearly all continued to work. Nearly all were in poor economic circumstances, quite unable to obtain extra nourishment and rest. Individual resistance appeared to be a most important factor in favorable progress and to depend on the economic position of the patient. Efficiency of collapse appeared to be the factor in treatment which exerted the most decided influence on the outcome of the case. Treatment of this group of patients appears to have been worth while in spite of the unfavorable type of disease and inability of patients to cease work on account of their economic circumstances. In 22 of the 39 patients who died up to December 1945 the operation had been technically efficient; they died as a result of extension of disease, caused by persistently patent cavities, or of toxemia due to empyema, which was caused by a spontaneous pneumothorax in 4 cases.

Diet and Tuberculosis in Captive Wild Birds.—Ratcliffe shows that a change in the system of feeding at the Philadelphia Zoological Garden has been followed by a distinct decrease in the frequency of avian tuberculosis. With the exception of a mixed lot of birds in an indoor flight cage, the disease has been most common among groups of birds whose food had consisted chiefly of whole or cracked grains. In the new diet grain has been replaced by a mixed ration. This has improved the quality and quantity of protein, has increased elements of the vitamin B complex and has added vitamins A and D and iodized salt to the diets. In some groups the drop in tuberculosis could have resulted from decreases in the number of imported infections. In other groups, however, all evidence suggests that resistance has been increased by improved nutrition.

Archives of Internal Medicine, Chicago

78:629-780 (Dec.) 1946

Typhoid: Clinical Analysis of 360 Cases. B. M. Stuart and R. L. Pullen.—p. 629.

*Latent Phase of Asiatic Schistosomiasis. P. K. Mason, W. B. Daniels, F. K. Paddock and H. H. Gordon.—p. 662.

*Clinical Nephropathies in Early Syphilis. E. W. Thomas and M. Schur.—p. 679.

*Association of Pneumonia with Erythema Multiforme Exudativum: Commission on Acute Respiratory Diseases. J. H. Dingle and others.—p. 687.

Behavior and Psychologic Problems of Young Diabetic Patients: Ten to Twenty Year Survey. A. E. Fischer and H. Dolger with technical assistance of Janet C. Loeb and B. Gordon.—p. 711.

Syphilis: Review of Recent Literature. F. W. Reynolds and J. E. Moore.—p. 733.

Latent Phase of Asiatic Schistosomiasis.—The study by Mason and his associates is based on observations of 300 patients admitted to Harmon General Hospital approximately six months after the onset of their acute illness overseas. Although the majority had residual complaints, such as abdominal discomfort, weakness, headaches, myalgia and nervousness, their general physical condition was excellent. In spite of previous treatment overseas, approximately one third of the patients had the ova of Schistosoma japonicum in their stools when the initial evaluation of their status was made at Harmon General Hospital. Treatment with antimony and potassium tartrate and fuadin containing equivalent amounts of trivalent antimony (0.58 Gm.) resulted in the disappearance of ova from the stools in 81 and 18 per cent of the patients respectively. Since no major toxic effects were encountered with antimony and potassium tartrate in the concentration employed, it is the drug of choice. Evidence indicates that 444 cc. of a 0.5 per cent solution of antimony and potassium tartrate, U. S. P., is the most effective therapy. This is given intravenously on alternate days, beginning with 8 cc. and increasing the dose 4 cc. with each dose until a maximal dose of 28 cc. is given. The dose of 28 cc. is repeated every other day until 444 cc. (2.2 Gm.) of antimony and potassium tartrate has been received.

Nephropathies in Early Syphilis.—Thomas and Schur state that 12, or less than 0.3 per cent of those treated for secondary syphilis, showed greatly abnormal urinary findings which responded rapidly and dramatically to intensive, rapid treatment for syphilis. Ten of the 12 were classified as syphilitic nephrosis and 2 as nephritis. In syphilitic nephrosis results of tests of renal function are not significantly abnormal as a rule, but albuminuria and cylindruria are present. In early syphilitic nephritis there is less albuminuria than in nephrosis and more hematuria. In 1 case of diffuse glomerulonephritis apparently due to secondary syphilis, in which there was hypertension and secondary anemia, there was response to antisyphilitic treatment with penicillin. Early syphilitic nephropathies leave no demonstrable sequelae.

Association of Pneumonia with Erythema Multiforme Exudativum.—The report by Dingle and his associates of the Commission on Acute Respiratory Diseases deals with 6 cases of erythema multiforme exudativum with predominant involvement of the mucous membranes of the mouth, seen at the Regional Station Hospital at Fort Bragg, North Carolina. In 3 of the cases clinical and roentgenographic evidence of pulmonary involvement was demonstrated. The report emphasizes the relationship of pneumonia to erythema multiforme exudativum. The latter has been regarded as a specific infectious disease, possibly of virus causation. Bacteriologic studies in this, as in other studies, failed to yield results, except that in 1 case bacteriologic and serologic evidence of beta hemolytic streptococcus infection was secured. While it is improbable that this organism represents the usual cause of erythema multiforme exudativum, it is possible that it may be one of the causes. The studies carried out in animals and embryonated eggs were probably adequate to rule out the presence of the virus of herpes simplex, vesicular stomatitis and members of the psittacosis-meningopneumonitis group. No etiologic agent was found. These studies neither rule out nor support a possible virus causation for cases of erythema multiforme exudativum. A report in the *Canadian Medical Association Journal* (**53:**427 [Nov.] 1945) on "Mucosal Respiratory Syndrome" states that nonbacterial pneumonia was observed in 14 of 17 cases presenting the severe form of erythema multiforme exudativum. The authors conclude that pneumonia was an integral feature of the syndrome and that its cause was not bacterial and was probably viral. Attempts to isolate an agent from the lung in the fatal case reported here were carried out on horses, cows, sheep, pigs and guinea pigs. Lesions were not produced in any of the animals.

Archives of Otolaryngology, Chicago

44:647-780 (Dec.) 1946

Penicillin Therapy in Otorhinolaryngologic Practice. F. H. Krauss.—p. 647.

*Penicillin in Peritonsillar Abscess and Peritonsillar Phlegmon: Report of Penicillin Therapy in 25 Cases. A. Rosenberg.—p. 662.

Gingival Hemorrhage with Oral Manifestations in Hereditary Hemorrhagic Telangiectasia: Successful Control with Sclerosing Agent Sylnasol; Effect of Vitamin P and Nicotinic Acid; Role of Case Reported Which Was Observed Five Years. S. Peluse.—p. 668.

New Treatment for Hearing Disorders. H. Hirschfield, M. Jacobson and A. Jellinek.—p. 686.

*Burns of Upper Respiratory Tract and Eyes from Nitrogen-Mustard Gas (1149): Clinical Study. G. I. Uhde.—p. 701.

Contributions to Plastic Surgery During 1945. L. A. Peer.—p. 715.

Penicillin in Peritonsillar Abscess.—The studies reported by Rosenberg were carried out by army doctors in Germany on military personnel between the ages of 21 and 41. Twenty-five cases of peritonsillar abscess and peritonsillar phlegmon were studied. Ten doses of penicillin, 20,000 Oxford units each, were given intramuscularly every three hours. Five patients required incision and drainage; in 2 patients the abscess ruptured spontaneously; in the remainder the acute inflammatory process subsided under treatment with penicillin. The therapeutic results obtained with penicillin in peritonsillar phlegmon are superior to those obtained with sulfonamides. If used early, penicillin may avert abscess formation and subsequent incision and drainage.

Burns from Nitrogen Mustard Gas (1149).—Uhde collected information on 8 casualties resulting during the developmental operation of a pilot plant for nitrogen mustard (1149) at Edgewood Arsenal, Md. This is a relatively unknown gas developed during World War II. Representative case histories of a vapor and of liquid burn are presented. The commonest complaint pertaining to the upper respiratory tract was hoarseness, and the commonest lesion was diffuse inflammation, frequently spotted with necrotic ulcers of grayish slough. It is supposed that these ulcers were due to the necrotizing action of the gas per se, but they may have been the result of bacteria acting on devitalized tissue. There was evidence that the latter surmise was true to a certain extent. The most frequent eye complaint was a burning sensation characterized by conjunctival injection and superficial punctate keratitis. Symptoms of acute esophagitis and gastritis were an interesting observation in that they may have been due to the swallowing of contaminated air. Under the conditions of these accidents the mucosa of the upper respiratory and digestive tracts and the conjunctiva appeared to be equally sensitive to the vapor of this gas.

Bulletin of Los Angeles Neurological Society

11:97-180 (Sept.-Dec.) 1946. **Partial Index**

Etiology of Idiopathic Epilepsy. J. M. Nielsen.—p. 97.
Intracranial Complications of Diseases of Eye and Orbit. C. B. Courville and R. J. Schillinger.—p. 102.
Cerebral Malaria: Review of Literature and Report of Case with Residual Symptoms Indicative of Cerebellar Involvement. C. W. Irish.—p. 111.
Calcification in Ganglion Cell Tumors of Brain: Review of Literature and Report of Surgically Verified Case. P. J. Vogel and C. B. Courville.—p. 124.
Visual Hallucinations as Localizing Manifestations of Lesions of Temporal and Occipital Lobes: Report of 2 Illustrative Cases with Symptoms Due to Vascular Malformations. R. Frantz and P. J. Vogel.—p. 135.
Multiple Gliomas: Survey of Problem and Report of 3 Additional Cases. N. E. Carl.—p. 159.
*Cerebellar Subdural Hydroma: Report of Acute Case Following Head Injury. W. T. Grant.—p. 164.
*Treatment of Epilepsy with Hydantal, New Anticonvulsive Drug: Preliminary Report of Its Use in 16 Cases. K. O. Von Hagen.—p. 168.
*Denial of Own Blindness (Anton's Syndrome): Report of 2 Cases, 1 with Autopsy. N. W. Brockman and K. O. Von Hagen.—p. 178.

Cerebellar Subdural Hydroma.—In the case reported by Grant, acute symptoms of right-sided cerebellar disturbance and of high intracranial pressure developed a few days after a head injury. Burr holes over the right cerebellum and right parietal lobe liberated a subdural hydroma in both places. Symptoms subsided within a week, and the patient has made a good recovery.

Use of Hydantal, a New Anticonvulsive Drug, in Epilepsy.—According to Von Hagen a tablet of hydantal contains 0.1 Gm. of 3-methyl 5.5 phenylethylhydantoin in combination with 0.02 Gm. of phenobarbital. He had the opportunity to try this drug in cases in which previous routine methods of treatment did not give symptomatic improvement or in which there developed a sensitivity to the preparation used. Hydantal alone or in combination with one of the barbiturates was given to 20 patients. Of these 9 received beneficial results, 7 reported no relief and 4 failed to return. One patient reported a dull feeling in her head with three tablets daily. Although the number of cases is small and the results are difficult to evaluate exactly, they do seem to indicate that hydantal is an effective anticonvulsant drug which is remarkably free from undesirable side effects.

Denial of Own Blindness (Anton's Syndrome).—The existence of blindness in patients who deny being blind is also known as Anton's syndrome, Gabriel Anton having called attention to this condition by the publication of 4 case reports in 1898 and 1899. Since then other cases have been reported and Brockman and Von Hagen describe 2 cases of this type. In both there were considerable intellectual deterioration, impairment of memory, disorientation, confabulation and complete blindness apparently due to bilateral involvement of the occipital lobes or the optic radiations. This was shown by necropsy in case 1. Brockman and Von Hagen have no explanation for the apparent relationship between the blindness and deafness noted in case 2. The pathogenesis of denial of blindness is not clearly understood, since in a few cases the blindness has been due to pathologic change in the retinas or in the optic nerves. In general it would appear that the condition is due to a disturbance in the to and fro circuits between the thalamus and the occipital cortex.

California Medicine, San Francisco

65:265-312 (Dec.) 1946

Natural History of Hemolytic Streptococcus Sore Throat. L. A. Rantz.—p. 265.
Treatment of Diseases of Virus Origin. M. D. Eaton.—p. 271.
*Tropical Acne. F. G. Novy Jr.—p. 274.
Some Fundamentals in Estrogen Therapy. S. C. Freed.—p. 277.
Diverticulum of Anterior Urethra: Report of Acquired Type. H. A. Zide and M. S. Siegel.—p. 279.
Indications for Use of Electroshock Treatment of Outpatients. B. Stewart.—p. 282.
Case of Coccidiosis in Man. R. A. Bankowski.—p. 284.
Rheumatoid Spondylitis: Its General Features and Management. E. W. Boland.—p. 285.

Tropical Acne.—According to Novy the term "tropical acne" arose during the war to describe those cases of acne vulgaris which were seen so frequently in the military personnel serving in the hot climates. These cases accounted for 28.5 per cent of the dermatologic cases sent home from overseas. It was seen mostly in those having suffered from previous, usually mild, acne vulgaris. It differs from acne vulgaris of the temperate zones in its rapid development, and it is of a deep cystic, indurated type which leaves mutilating scarring. Tropical acne is seen most frequently on the back, shoulders and neck, whereas the usual acne vulgaris most commonly involves the face. Excessive heat which overstimulates the sebaceous glands appears to be the chief factor in the development of tropical acne. The recent war has shown that those with acne vulgaris should not be sent to the tropics because, with many, the disease is aggravated and severe scarring results.

Canadian Journal of Public Health, Toronto

37:435-480 (Nov.) 1946

*BCG Vaccination in Hospitals and Sanatoria of Saskatchewan: Study Carried Out by National Research Council of Canada. R. G. Ferguson.—p. 435.
New Frontiers in Health Education. I. V. Hiscock.—p. 452.
Industrial Hygiene Program in Agricultural Province. H. Malcomson.—p. 458.
Studies of Serology of Typhus Fever: III. Weil-Felix Test and Complement Fixation with *Proteus* OX19 Following Typhus Fever Infection and Vaccination. M. Elizabeth Malcomson and F. O. Wishart.—p. 461.

BCG Vaccination in Hospitals and Sanatoriums.—Ferguson says that when the breakdown of persons caring for the tuberculous sick became particularly noticeable in Saskatchewan in the early thirties it was decided to introduce periodic tuberculin testing and x-raying of nurses and employees in the larger hospitals and sanatoriums. After five years of study it was evident that by far the highest incidence of tuberculosis occurred among exposed persons who had been negative to tuberculin on entering the infectious environments. A coincidental experiment in the protection of Indian infants by BCG vaccination suggested that an attempt be made to afford a similar protection to unavoidably exposed nurses and sanatorium employees by means of BCG vaccination. BCG vaccination of nurses negative to tuberculin on entrance reduced the number of cases of manifest tuberculosis among this group to a fourth, and among sanatorium employees the results were even more favorable. Thus, although BCG is not a 100 per cent effective prophylactic, its protection is very considerable. In the vaccinated group the lesions were less extensive than in the nonvaccinated.

Connecticut State Medical Journal, Hartford

10:971-1064 (Dec.) 1946

Clinical Use of Penicillin and Streptomycin. C. S. Keefer.—p. 973.
Clinical Application of Knowledge of Rh Factors. J. M. Freiheit.—p. 975.
Effect of Pulmonary Disease on Heart, with Special Reference to Co
Pulmonale. M. Dressler.—p. 983.
Nature and Growth of Child Care Problem. R. J. Smith.—p. 991.
Liberal Education and Its Relation to Medicine. G. K. Funston.—p. 99
Connecticut Plan for Medical Care of Veterans. H. T. Wood.—p. 99

Experimental Medicine and Surgery, Brooklyn

4:289-356 (Nov.) 1946

Pharmacologic Studies of Effects of Clavatin. A. Schweitzer.—p. 289.
Value of Alkali Reserve Test in Obstetrics and Gynecology. A. Sadovsky and R. M. Heifetz.—p. 306.
*Intrauterine Use of Sulfanilamide. A. Sadovsky, Y. M. Bromberg and Z. Polishuk.—p. 310.
Extrasystoles in Experimentally Produced Hypertension. B. Kisch.—p. 319.
Action of Prostigmine in Nutritional Muscular Dystrophy of Vitamin E Deficiency. G. J. Martin.—p. 326.
Rejection by Dogs of Methylcholanthrene Implanted Beneath Superficial Fascia. R. M. Mulligan.—p. 333.
Systemic and Local Effects of Thyoglycolic Acid and Bisulfite Compounds. F. Reiss and B. Gerstl.—p. 338.

Intrauterine Use of Sulfanilamide.—Sadovsky and his co-workers studied the effect of sulfanilamide during and after intrauterine intervention in 77 cases. The local bacteriostatic action due to high local concentration has been studied by cultures taken from the uterus before and after the application of sulfanilamide in 14 cases; in 11 cases the bacteriostatic effect could be demonstrated. It has been observed that sulfanilamide, when applied into the uterine cavity, reaches its maximal blood level three to six hours after the application, and it may be found in the blood stream even after twenty-four hours. This has been observed to occur in the uterus at term after removal of the placenta and in the early months of pregnancy after removal of placental rests as well as after diagnostic curettement. The absorbability of a pregnant uterine wall is better than that of a nonpregnant uterus, and it is especially high in the uterus at term. Sulfanilamide is absorbed better through the uterine wall than from a surgically produced wound. Absorption from the uterus also compares favorably with absorption after oral administration. In 50 patients with various clinical conditions the prophylactic use of sulfanilamide proved to be of special value in manual removal of the placenta, in cesarean section and in hysterotomy for submucous myoma, while it was used also as a therapeutic measure in cases of septic abortion and chronic endometritis.

Gastroenterology, Baltimore

7:393-510 (Oct.) 1946

*Laboratory Aids in Diagnosis and Management of Infectious (Epidemic) Hepatitis: Analysis of Results Obtained by Studies on 34 Volunteers During Early and Convalescent Stages of Induced Hepatitis. J. R. Neefe and J. G. Reinhold.—p. 393.
*Treatment of Postoperative Biliary Dyskinesia: Report of 8 Cases of Endocholedochal Sphincterotomy. R. Colp.—p. 414.
Nutritional Deficiency as Probable Cause of Hepatic Damage in Repatriated Prisoners of War. L. J. Meinenberg and A. M. Snell.—p. 430.
*Amino Acid Alimentation in Gastrointestinal Diseases. J. H. Remington, J. A. Bargen and J. S. Lundy.—p. 442.
History of Hemorrhage in Peptic Ulcer. S. A. Wilkinson and M. L. Tracey.—p. 450.
Relationship of Trauma to Perforation of Peptic Ulcer. B. B. Crohn, M. O. Rouse and H. W. Smith.—p. 456.
Hypertrophic Pyloric Stenosis in Adult. M. G. Vorhaus.—p. 464.
Effect of B Vitamins on Intestinal Absorption and Food Utilization: I. Studies in Rats on Diets Deficient in Certain B Vitamins and During Recovery from Such Diets. T. L. Althausen, J. J. Eiler and Mabel Stockholm.—p. 469.

Laboratory Aids in Infectious Hepatitis.—Neefe and Reinhold applied a group of hepatic tests at frequent intervals to 34 volunteers before, during and after infectious (epidemic) hepatitis induced by oral or parenteral inoculation with materials containing a virus that had been responsible for an epidemic in a Pennsylvania summer camp. Tests that were among the most prompt and consistent indicators of the initial hepatic disturbance often were of little value in detecting persistent hepatic disturbance in the convalescent stage of the disease. In early (preicteric) infectious hepatitis the sulfobromophthalein, Harrison spot (urine bilirubin), cephalin cholesterol flocculation, 1′ serum bilirubin and thymol flocculation tests, becoming positive in the order named, were found to provide the earliest evidence of hepatic disturbance. The methylene blue (urine bilirubin), total serum bilirubin, colloidal gold, urine urobilinogen, thymol turbidity and qualitative van den Bergh tests responded either later or less consistently in early hepatitis. During the convalescent stage the thymol (flocculation and turbidity) test was found to be the most consistent indicator of persistent disturbance with the colloidal gold, cephalin cholesterol flocculation, 1′ serum bilirubin and sulfobromophthalein tests following in order of decreasing consistency. The total serum bilirubin, urine urobilinogen and urine bilirubin tests frequently gave normal results in spite of persistent hepatic disturbance revealed by the other procedures. Considerable variation in the response to these tests was noted in individual cases. Because of the variability of response with the stage of the disease and with individual patients, the routine use of a group of tests is essential for the detection of mild hepatic disturbance at any stage of the disease. A group composed of the sulfobromophthalein, total and 1′ serum bilirubin, urine bilirubin and urobilinogen, cephalin cholesterol flocculation and thymol (turbidity and flocculation) procedures appears to constitute the most reliable group of tests for this purpose.

Postoperative Biliary Dyskinesia.—Colp discusses the treatment of biliary dyskinesia and presents reports on 8 patients in whom an endocholedochal sphincterotomy had been performed. Six have shown improvement and have been relieved of their troublesome symptoms. One patient has had occasional slight epigastric distress during her menstrual period, while another has had recurrence of colic after nineteen months of absolute freedom from attacks. Surgical section of the sphincter usually causes permanent paralysis. Because of a recurrence of symptoms in 1 patient it may be advisable in the future to divide the sphincter in two separate planes. Evidently the scar resulting from the sphincterotomy has never caused a secondary contraction of the papilla resulting in stenosis and biliary stasis.

Amino Acid Alimentation.—Remington and his associates say that for ten years intermittently preparations of amino acids have been used at the Mayo Clinic. They have been administered in the form of digests of various proteins parenterally and orally in several intestinal diseases, such as ulcerative colitis, regional enteritis, enterocutaneous fistula and ileal stoma, gastrojejunocolic fistula, sprue and pancreatic insufficiency. Oral administration has been shown to be preferable as far as utilization of nitrogen is concerned. Some patients can drink 250 cc. of 20 per cent solutions of amino acids such as parenamine or amigen several times a day. However, the taste is not pleasant and few can do this. Palatable products are being perfected and comparative nitrogen balance studies are being carried out. Too rapid intravenous administration of most of the available protein digests will cause nausea and vomiting. In order to prevent these effects at least three hours should be taken to administer each liter. The authors conclude that amino acids administered orally or parenterally are nutritionally beneficial as a protein substitute when sufficient food cannot be ingested or absorbed.

Georgia Medical Association Journal, Atlanta

35:343-420 (Dec.) 1946

One Year's Experience with Mobile X-Ray Unit. A. J. Davis.—p. 343.
Paratyphoid B Meningitis in Infant: Report of Case. L. R. Massengale.—p. 345.
Surgical Management of Obstructive Prostate. G. J. Bridges.—p. 347.
Advancement in Treatment of Common Infection in Lungs. A. Worth Hobby.—p. 350.
Tuberculosis in Private Practice. C. C. Aven.—p. 357.
Social, Prophylactic, Medical and Surgical Aspects of Bronchiectasis. O. A. Abbott.—p. 360.
*Superior Sulcus Pulmonary Tumor (Pancoast Syndrome). J. E. Walker.—p. 264.
Some Nonspecific Factors Inducing Asthma, and Their Treatment. J. L. Jacobs.—p. 365.
Magnetic Removal of Foreign Bodies from Food and Air Passages. M. Equen.—p. 368.

Superior Sulcus Pulmonary Tumor (Pancoast Syndrome).—An accountant aged 56 had had pain in the shoulder for about a year. One month prior to consultation he had been obliged to give up his work on account of inability to write. He had lost 20 pounds (9 Kg.). Examination showed barely perceptible fulness above the right clavicle and indefinite dulness on percussion above and below the clavicle. The right pupil was about twice the diameter of the left. The sputum was negative for tubercle bacilli. A diagnosis of malignant tumor of the Pancoast type was made. Removal of the tumor was impossible. A biopsy specimen showed that the tumor was a bronchiogenic carcinoma of the squamous cell type. Death occurred fourteen days after the operation. Walker stresses that a superior sulcus pulmonary tumor (Pancoast syndrome) is characterized by intractable shoulder girdle pain, by an x-ray opacity at the pulmonary apex and frequently by Horner's syndrome and rib erosion. Of these, the most important features are the pain and the x-ray opacity.

Journal of Clin. Endocrinology, Springfield, Ill.

6:707-768 (Nov.) 1946

*Is Endemic Goiter Due to Lack of Iodine? I. Greenwald.—p. 708.
Effect of Oral Thyroid Medication on Prothrombin Time. S. Shapiro.—p. 742.
*Extreme Insulin Resistance: Case Study. T. H. McGavack, S. D. Klotz, Mildred Vogel and J. F. Hart.—p. 747.
Myxedematous Dropsy: Report on Case of Myxedema with Congestive Heart Failure and Serous Effusions with High Protein Content. J. C. Mussio-Fournier, J. M. Cerviño and J. J. Bazzano.—p. 758.

Is Endemic Goiter Due to Lack of Iodine?—The hypothesis that lack of iodine is an important factor in endemic goiter has been subjected by Greenwald to a critical examination. He stresses that the evidence that there is a deficiency in the iodine intake in goitrous regions is faulty in that the proponents of this view have not properly controlled their analytical technic. Different varieties of the same vegetables, grown on the same soil and at the same time, show a greater variation in their iodine contents than the differences claimed to exist between foods produced in goitrous and nongoitrous areas. A negative correlation between the weights of the thyroids and their iodine contents could not be demonstrated in any one of twenty-three series of analyses by seventeen different observers. Such correlation as has been found to exist is positive, the larger glands tending to contain the larger amounts of iodine. Persons with goiter do not show a low metabolic rate, the usual sign of thyroid insufficiency. Goiters have been produced in rats on certain iodine poor diets, but the addition of such small quantities of iodine as are found in ordinary diets has not prevented the enlargement of the thyroids. Glands of normal size and microscopic appearance have been obtained in rats on such diets only by the use of much larger amounts of iodine. The prophylactic administration of iodine to human beings has not reduced the incidence of new goiters to zero. In fact, in some cases there has been an increase in the incidence. Greenwald concludes that endemic goiter is not due to a lack of iodine.

Extreme Insulin Resistance.—A man with mild diabetes had three distinct episodes of extreme insulin resistance, each of which was associated with local and general allergic reactions to insulin. During the third and last refractory period reagins were found in the blood. There was no evidence of any antibodies in the circulation having a direct anti-insulin effect. McGavack and his associates feel that the fact that the patient had a cirrhotic liver during the entire period and a retention cyst of the pancreas in the last attack points to a possible hepatopancreatic abnormality as an additional factor in producing and maintaining the insulin resistant state.

Journal of International College of Surgeons, Chicago

9:655-782 (Nov.-Dec.) 1946

Application of Cutis Graft to Various Types of Reconstructive Surgery. J. E. Cannady.—p. 655.
Surgery of Splenic Tumors. M. Behrend.—p. 664.
Retropharyngeal Abscess in Adults: Review of Literature and Report of Case. M. Thorek and M. M. Schapiro.—p. 671.
*Psychosurgery for Relief of Unbearable Pain. J. W. Watts and W. Freeman.—p. 679.
Acute Gallbladder Disease in the Aged. S. J. Carnazzo.—p. 705.
Case of Peritonitis Calcificans et Ossificans in Unusual Location. H. Nohteri.—p. 712.
*Fine Chromic Catgut versus Cotton Sutures in Wound Closure. G. A. Stevens, H. P. Sloan, W. A. Wickham and T. P. Foltz.—p. 716.
Preoperative Considerations in Toxic Goiter. U. G. Dailey.—p. 720.
Clinical Evaluation and Analysis of 268 Cases of Pelvic Infection. I. Tractenberg.—p. 724.
Perthes Test and Its Practical Utilization: Use of Elastic Garter in Selected Cases of Varicosities. E. J. Orbach.—p. 730.
Anatomosurgical Concept of Parathyroids. M. A. Manzanilla.—p. 755.
Surgical Treatment of Acute Cholecystitis in the Aged. S. J. Carnazzo.—p. 764.

Psychosurgery for Relief of Unbearable Pain.—Among the 360 patients with nervous and mental disease on whom Watts and Freeman performed lobotomies there were some whose complaints of pain appeared excessive. Following lobotomy not only was there a disappearance of the anxiety, apprehension and nervous tension but the unceasing complaints of pain were no longer heard. This led the authors to employ psychosurgery for the relief of unbearable pain. Six of the 9 patients presented had mental disorders. All of these complained of severe, unbearable pain. Three of the 6 had demonstrable organic disease but the complaints were out of proportion to the condition. The other 3 had no organic disease. The authors also present 3 patients with severe pain due to radiculitis, carcinoma of the rectum and tabes dorsalis. They conclude that when unbearable pain is one of several symptoms in a mental disorder the complaints of pain disappear along with the nervous reactions following prefrontal lobotomy. When pain due to organic disease becomes unbearable (the disease itself being incurable) and fear of pain becomes as dreadful as pain itself, prefrontal lobotomy is indicated. Psychosurgery alters the individual's reaction to pain without materially changing his ability to feel pain. Pain may be present but when divorced from its implications—the threat to his security and fear of disability and death—it then becomes bearable and may be accepted with fortitude.

Chromic Catgut vs. Cotton Sutures.—Stevens and his associates made a carefully controlled study of 100 consecutive cases. Only operations for nonrecurrent inguinal hernias and for clean appendixes were included. In 50 cases cotton sutures were used and in 50 fine chromic catgut. The results obtained suggest the clinical superiority of fine chromic catgut over cotton in the closure of clean wounds. Early ambulation is not contingent on the type of suture material used. There was no difference in postoperative pain and temperature following the use of fine chromic and cotton sutures.

Journal of Investigative Dermatology, Baltimore

7:269-400 (Dec.) 1946

Mycosis Fungoides Developing in Patient with Congenital Ichthyosiform Erythroderma, Including Consideration of Multiple Neoplastic Processes. H. Beerman and C. C. Thomas.—p. 271.
*Immunologic Studies on Patients Developing Urticaria Associated with Penicillin Therapy. J. L. Callaway and S. W. Barefoot.—p. 285.
Eosinophil Granuloma of Skin. H. M. Buley.—p. 291.
Treatment of Dermatoses with Benadryl (Beta Dimethylaminoethyl Benzhydryl Ether Hydrochloride): Analysis of Its Effects on 170 Patients with Various Dermatoses. L. C. Goldberg.—p. 301.
*Recurrent Vesicular Eruption of Hands Due to Food Allergy. J. M. Flood and D. J. Perry.—p. 309.
Penicillin and Streptomycin in Treatment of Experimental Erysipelothrix Rhusiopathiae Infection of Mice, with Observations on Immunologic Reaction to the Infection. J. V. Klauder and Anna M. Rule.—p. 329.
Treatment of Tinea Capitis with Gliotoxin in Special Plastic Base. Elizabeth R. Constant.—p. 337.
*Cutaneous Diphtheria: Report of 140 Cases. C. S. Livingood, D. J. Perry and J. S. Forrester.—p. 341.
Bacterial Flora of Normal and Infected Skin: Evaluation of Various Methods of Performing Skin Cultures. D. M. Pillsbury and Anna C. Nichols.—p. 365.
Experimental Aspects of Penicillin Sensitization, with Special Reference to Conjoint Sensitization to Superficial Fungous Disease. F. E. Cormia and G. M. Lewis.—p. 375.
Melanin Pigmentation Through the Ages, with Special Reference to Pigmentation of Planarias and Whales, and Histology of Whale Skin. S. W. Becker.—p. 381.

Urticaria Associated with Penicillin Therapy.—Callaway and Barefoot report 5 instances of urticaria associated with penicillin therapy in 2 men aged 26 and 44 and in 3 women between the ages of 17 and 42. The patients were studied for hypersensitivity and for circulating antibodies to sodium penicillin by means of intracutaneous tests, passive transfer tests (including the usual Prausnitz-Kuestner reaction, "distant reaction," and reversed passive transfer tests) and precipitin tests. All intracutaneous and passive transfer tests were negative. The precipitin tests were inconclusive. In the immunologic studies on 2 patients the authors were able to use penicillin identical with that which the patients received therapeutically and to which they had reacted clinically. The immunologic studies on these patients were in no way different from those on 3 patients who had received penicillin of which the manufacturer and lot number were unknown. In all instances the urticaria was controlled by benadryl (beta-dimethylaminoethyl benzohydryl ether). It is suggested that an excessive amount of histamine was present to account for the urticaria, but from the studies reported the urticaria cannot be accounted for on the basis of an antigen-antibody reaction.

Recurrent Vesicular Eruption of Hands.—Flood and Perry report 30 instances of vesicular dermatitis of the hands in 28 men between the ages of 21 and 39 years and in 2 women aged 24 and 26. Food allergens were detected by ingestion while 29 patients were on a strict trial diet. The allergen was detected by having 1 patient keep a food diary. Prompt improvement occurred as soon as the offending foods were withheld and definite reactions occurred on ingesting an offending food. The foods most likely to give a reaction are tuna fish, wheat, milk, tomato, pork, pineapple, American cheese, eggs, lamb, chocolate and chicken. The foods less likely to give a reaction are prunes, beef, cabbage, salmon, tea, pears and lemon.

Cutaneous Diphtheria.—Livingood and his co-workers report 140 instances of cutaneous diphtheria among American soldiers in the North Burma campaign during the summer of 1944. Cutaneous diphtheria is essentially a tropical infectious disease. Mud, insects, leeches and constant maceration of the skin due to excessive sweating made it impossible for the soldiers to maintain an intact cutaneous surface. Except for the rare eczematous forms the disease was primarily an ulcerative process on the skin involving the entire epidermis and the underlying subcutaneous tissue. A grayish, yellowish or brownish grey membrane was seen only at an early stage of the disease, while a black or brownish black adherent leathery slough with a dry outer surface was the important single clinical feature in more than 75 per cent of the patients. Healing always started evenly around the periphery of the lesion and proceeded toward the center, so that the central portion was the very last to epithelize. The resulting scars were quite distinctive. In 20 per cent of the cases spontaneous occurrence of a small bulla in some part of the scar was observed which is of considerable diagnostic significance in diphtheritic ulcers. Unhealed ulcerations became hypesthetic or anesthetic three to five weeks after the onset, and these sensory changes are a diagnostic aid of great importance. The most common site of involvement was on the lower extremities. Almost all the patients required at least four months of hospitalization. Neurologic complications occurred in 34 per cent and cardiac complications in 4.5 per cent of 109 relatively unselected patients in this series. The administration of diphtheria antitoxin (standard dosage of 40,000 units) as long as one month after the onset of the lesions resulted in a low incidence of complications and uneventful healing of the ulcerative lesions.

Journal-Lancet, Minneapolis

66:399-430 (Dec.) 1946

Plasma Proteins in Surgery: Review of Literature. R. O. Quello. —p. 399.
Surgery of Stomach. O. T. Clagett.—p. 403.
Tuberculosis Control in Colleges and Universities. J. A. Myers.—p. 409.
Use of Physostigmine and Neostigmine Therapy in Neuromuscular Dysfunction Caused by Trauma, with Special Reference to Sequelae of War Wounds. J. Goldman and A. Cohen.—p. 415.

67:1-46 (Jan.) 1947

Francis Edward Harrington, Physician, Administrator and Benefactor of Man: Personal Appreciation. J. A. Myers.—p. 2.
Epidemiology of Poliomyelitis. G. W. Anderson.—p. 10.
Immunization Against Pertussis. W. H. Tucker.—p. 14.
Control of Influenza by Immunization. J. E. Salk.—p. 18.
Medical Economics. M. M. Weaver.—p. 24.
Public Health Cancer Control. W. A. O'Brien.—p. 29.
Diphtheria in Minnesota. D. S. Fleming.—p. 32.
Present Status of Tropical and Exotic Diseases Among Servicemen. D. R. Mathieson.—p. 37.

Journal of Nervous and Mental Disease, New York

105:1-106 (Jan.) 1947

Etiology of Dementia Precox: Partial Review of Literature, 1935 to 1945 and Attempt at Conceptualization. L. Bellak and Elizabeth Willson. —p. 1.
Etiology of Depersonalization. I. Galdston.—p. 25.
Twin Studies on Psychopathology of Suicide. F. J. Kallmann and Mary M. Anastasio.—p. 40.
Observations on Use of Phonograph Record of Battle Sounds Employed in Conjunction with Pentothal in Treatment of 14 Cases of Severe Conversion Hysteria Caused by Combat. W. H. Kupper.—p. 56.
Dynamics of Schizophrenia. L. R. Sillman.—p. 61.
Observations on Current Army Psychiatric Problems: Comparison of Outpatient Records of January 1944 and January 1946. J. W. Bick Jr.—p. 73.
Meralgia Paresthetica: Age Incidence. J. M. Schneck.—p. 77.

Journal of Pediatrics, St. Louis

29:677-802 (Dec.) 1946

Detection of Susceptibility to Whooping Cough: I. Institutional Experiences with Pertussis Agglutinogen as Skin Test Reagent. Harriet M. Felton and E. W. Flosdorf.—p. 677.
*Id.: II. Clinical Standardization of Diagnostic Skin Test Reagent and Its Use in Institutional and in Private Practice. Harriet M. Felton, J. Smolens and S. Mudd.—p. 687.
Hypofunction of Adrenals in Early Life. J. C. Jaudon.—p. 696.
*Intra-Articular Penicillin Treatment of Suppurative Arthritis in Infants and Children. J. L. Tucker and W. R. Tepper.—p. 711.
Dynamics of Newly Born Babies. Catharine Knop.—p. 721.
Some Effects of Injected Cytochrome C in Myocardial and Cerebral Anoxia in Man. S. Proger and D. Dekaneas.—p. 729.
*Pneumococcus Meningitis in Infants and Children: Report on Use of Combined Sulfonamide and Penicillin Therapy. S. Ross and F. G. Burke.—p. 737.
*Intravenous Alimentation of Infants. Katharine Dodd and S. Rapoport. —p. 758.
Retrolental Fibroplasia. T. L. Terry.—p. 770.
Mucous Cyst at Base of Tongue as Cause of Sudden Death in an Infant: Report of Case. L. Whittier and E. F. Dombrowsky.—p. 774.

Standardization of Skin Test Reagent for Whooping Cough.—Felton and her associates compared the agglutinogen of phase I Hemophilus pertussis prepared by a method of chemical extraction with the sonic extracted material which has been shown to be a satisfactory skin test agent for susceptibility to pertussis. The acid extracted agglutinogen was standardized against the sonic product and found to be more potent and to give more clearcut reactions. Review of these data showed that a twenty-four hour reading time could be recommended. This agglutinogen gives results identical with those obtained with the sonic extracted material; there is no reaction even in large doses in normal (susceptible) persons and an allergic reaction at the site of injection in any individual with solid immunity to whooping cough from either immunization or previous attack of the disease. In an institution with annual outbreaks of whooping cough the use of agglutinogen before the anticipated epidemic was followed by a significant decrease in the number of cases, all of which occurred in the group predicted by the skin test to be susceptible. Yearly skin testing of new students followed by immunization of all susceptible children has resulted thus far in the absence of whooping cough from this school. The use of agglutinogen has a place as a public health measure in periodic examinations of young children.

Intra-Articular Penicillin in Suppurative Arthritis in Children.—Tucker and Tepper report 4 cases of suppurative arthritis in infants and children in which surgical intervention was not required. Three were in the acute stage of the disease and 1 in the chronic stage, and adjacent osteomyelitis was present in 3. All were treated by joint aspiration and intra-articular instillation of penicillin. Supplemental therapy consisted in intramuscular penicillin in all, oral sulfadiazine in 3, transfusions and physical therapy. Three surviving patients were seen after discharge at three, nine and twelve months respectively, with complete return of function in the last 2 and without recurrence in any. Intra-articular penicillin therapy alone in large dosage may be adequate.

Combined Sulfonamide and Penicillin in Pneumococcic Meningitis in Children.—In studies on 19 infants and children with pneumococcic meningitis treated with sulfadiazine and penicillin Ross and Burke found that penicillin should be administered both intramuscularly and intrathecally to achieve therapeutic spinal fluid penicillin concentrations. The combination with sulfadiazine appears to offer advantages over penicillin alone. Therapy should be continued for at least eight to twelve days after sterilization of the spinal fluid. Type specific antiserum was administered only to the first 7 of the 19 patients receiving combined sulfonamide-penicillin therapy. There were 6 recoveries and 1 death among the 7 receiving antiserum; and there were 10 recoveries and 2 deaths among those who did not receive antiserum. The series is too small to appraise the value of antiserum. The importance of the early institution of therapy in pneumococcic meningitis cannot be overemphasized. If all the measures in present day therapy are brought to bear as quickly and as vigorously as possible, the prognosis, even in the infant age group, is relatively good.

Intravenous Alimentation in Infants.—Dodd and Rapoport report administration to infants by venoclysis of the needed elements of nutrition for periods up to fifteen days. Most of the children had chronic or recurrent diarrhea and vomiting. The aim was to supply adequate fluid and salts and at least maintenance amounts of calories and protein. A total fluid intake of 150 cc., 50 calories and 2 Gm. of protein per kilogram of body weight was elected. The saline value was calculated on the basis of Butler's figures as 80 cc., with an addition of 5 cc. for each kilogram of body weight. In malnourished infants the attempt was made to furnish sufficient protein and calories to produce weight gain. It was shown that maintenance of fluid and electrolyte equilibrium by parenteral fluid administration is possible even in small infants during periods of partial or total withdrawal of oral feeding. With the use of dextrose, whole blood, plasma and casein hydrolysate a gain in weight may be achieved. A daily record of total intake of fluid, saline, calories and nitrogen is an essential prerequisite. Premature and very young infants require less saline in proportion to their body weight than do older infants. Contamination of the casein hydrolysate, infection at the site of needle punctures and thrombosis of the veins present a considerable problem, but by the use of a closed system of administration the more serious difficulties have been almost completely overcome. Thrombophlebitis and wound infection continue to be troublesome.

Southern Medical Journal, Birmingham, Ala.

39:921-1004 (Dec.) 1946

*New Hemostatic Dressings in Anorectal Surgery. C. Rosser.—p. 921.
Mongolism: An Objective Early Sign. H. Cummins and R. V. Platou.—p. 925.
Intrathoracic Esophagojejunostomy for Lesions of Upper Third of Esophagus. W. F. Rienhoff Jr.—p. 928.
Talonavicular Synostosis. F. G. Hodgson.—p. 940.
Impact of Scientific Progress on Economics of Medical Care. H. H. Shoulders.—p. 942.
Left Shift of Medical Practice. C. W. C. Moore.—p. 946.
*Recognition of Certain Forms of Congenital Heart Disease Amenable to Surgical Treatment. Gladys J. Fashena.—p. 948.
Hysterectomy: Study of 607 Cases. C. H. Tyrone, C. G. Collins, J. C. Weed, R. F. Zeigler Jr. and J. B. Crawford.—p. 957.
Biliary Tract Surgery: Inquiry into Reasons for 33 Deaths in 453 Operations. J. T. Sanders and W. R. Wilkinson.—p. 961.
Role of Surgical Treatment in Management of Hypertension. E. M. Isberg and M. M. Peet.—p. 966.
*Preliminary Observations on Use of Melarsen Oxide in Malaria. E. H. Payne, E. Balthazar and D. A. Bezerra.—p. 970.
*Further Experience with Melarsen Oxide (A New Arsenical) in Treatment of Tropical Disease. E. H. Payne, E. Balthazar and J. S. Fernandes.—p. 972.
Tuberculin Testing in Birmingham, Ala., and Questions Raised Concerning Tuberculosis Control Program. Ruth Berrey, Berta Fridley and Thyra Christensen.—p. 976.
Portal Cirrhosis in the Obese. W. H. Kelley.—p. 978.
Hypoplastic Anemia Improvement Following Splenectomy. L. Levy II and P. Pizzolato.—p. 981.
Shifting Dulness in Abdomen. W. R. Moses.—p. 985.

New Hemostatic Dressings in Anorectal Surgery.—Rosser presents the results of a clinical investigation involving the application of gelatin sponge, oxidized cotton and oxidized gauze to surgical procedures in and about the anal canal. He concludes that these absorbable hemostatic materials apparently satisfy the criteria for desirable postoperative anal dressings. Their effectiveness as hemostatic agents is demonstrated by the absence of primary hemorrhage in 117 anorectal hospital procedures. The materials should be applied as small single dressings to the individual wounds and not inserted as occluding packing.

Congenital Heart Disease Amenable to Surgical Treatment.—The three types of congenital heart disease discussed by Fashena are coarctation of the aorta, patent ductus arteriosus and pulmonary stenosis or pulmonary atresia. The surgical correction of coarctation of the aorta and of pulmonic stenosis is still in the experimental stage, and no predictions can be made concerning the long term results of these operations. All three of the operative procedures require the utmost skill in intrathoracic surgery as well as specialized technics in anesthesia. For these reasons it is desirable that cardiac surgery be confined for the present to large medical centers where the requisite study can be given to these patients and where follow-up data can be accumulated more advantageously.

Melarsen Oxide in Malaria.—Fifty-eight unselected cases of malaria were treated in public clinics with intravenous melarsen oxide. Twenty-five mg. was given daily with the intention of completing a series of seven consecutive injections. Forty of these completed the series of injections. The symptoms subsided on or about the fourth or fifth day of treatment. Upper abdominal tenderness disappeared and enlarged spleens became gradually reduced in size in chronic cases. Five patients either experienced a relapse or acquired a reinfection. Payne and his associates conclude that melarsen oxide will cause remission and possible cure of malarial infection.

Melarsen Oxide (New Arsenical) in Tropical Disease.—Payne and his associates were engaged in maintaining a medical and health program for workers and their families engaged in production of quartz and mica in the states of Minas Gerais and Goyaz, Brazil. There was a complete lack of proper food, housing and sanitation. The health of the population was extremely poor. Malaria was present in pandemic form. Tropical ulcer caused an economic loss second only to malaria. In northern Goyaz, Leishmaniasis incapacitated many for work. Dysentery, both amebic and bacillary, was common. Hookworm was pandemic, and epidemics of typhoid and smallpox roamed throughout the entire region. Refrigeration was not available in this territory, and it was necessary to use drugs unaffected by the deteriorating effects of heat and moisture. Melarsen oxide is a stable trivalent arsenical compound. The drug was given by intravenous injection and was free from toxic reactions. Tropical ulcer was found to respond well to melarsen oxide therapy. Pain and induration subsided rapidly. Healing time decreased by 50 per cent or more. Frambesia in its secondary stage responds rapidly to intravenous melarsen oxide therapy. Results compared favorably with those obtained with mapharsen.

Western J. Surg., Obst. & Gynecology, Portland, Ore.

55:1-80 (Jan.) 1947

Histophysiology of the Thyroid. J. Wahlberg.—p. 1.
Some Factors in Metabolism of Iodine by Thyroid Gland. W. P. VanderLaan and J. E. VanderLaan.—p. 10.
Circulating Thyroid Hormone in Blood and Lymph. W. T. Salter.—p. 15.
What Has Thiouracil Taught Us About Pathologic Physiology of Graves' Disease? R. W. Rawson and Janet W. McArthur.—p. 27.
*Thiouracil: Preoperative Use in 400 Patients with Severe Hyperthyroidism. E. C. Bartels and G. O. Bell.—p. 39.
Status of Thiouracil in Treatment of Toxic Goiter. W. O. Thompson, P. K. Thompson and D. M. Mandernach.—p. 50.

Thiouracil in Hyperthyroidism.—Bartels and Bell used thiouracil at the Lahey Clinic in the preoperative preparation of 400 patients with severe hyperthyroidism, 338 of whom had primary hyperthyroidism while 62 had toxic adenomatous goiter. These patients represent about 35 per cent of those having thyroidectomy for hyperthyroidism during the last three years. One hundred and fifty-seven patients (39 per cent) were over 50 years of age and 53 (12 per cent) were over 60; 150 patients (37 per cent) had hyperthyroidism of over two years' duration; 211 patients (52 per cent) had lost more than 20 pounds (9 Kg.) and 40 (10 per cent) had lost more than 50 pounds (22.7 Kg.); 209 patients (52 per cent) had initial basal metabolic rates greater than +50. Thiouracil was administered in a daily dose of 0.6 Gm. given in three fractional doses of 0.2 Gm. This daily dose was continued during the entire time of treatment. Patients with primary hyperthyroidism of less than six months' duration who have not received iodine respond more readily and patients with adenomatous goiter having received previous iodine respond very slowly; consequently the duration of thiouracil treatment must be individualized. Only 35 among the 400 patients developed a reaction during thiouracil administration. Irrespective of the type and the severity of hyperthyroidism or degree of physical depletion, patients adequately treated with thiouracil were actually restored to a normal state of health before thyroidectomy was done. Experience indicates that subtotal thyroidectomy can be done with greatly reduced risk and hyperthyroid reactions during anesthesia and after operation can be eliminated completely. There was one postoperative death and one death from agranulocytosis due to thiouracil, a mortality of 0.5 per cent.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Australian and New Zealand J. Surgery, Sydney

16:1-88 (July) 1946

Culture of Human Life. J. H. L. Cumpston.—p. 3.
*Surgical Hazards in Treatment of Cholecystitis and Cholelithiasis. J. B. G. Muir.—p. 14.
Surgical Treatment of Myomata of Uterus, with Particular Reference to Myomectomy. L. W. Gleadell.—p. 30.
Secondary Hemorrhage. W. A. Hailes.—p. 39.
Fluid Balance Chart. C. Gale.—p. 44.
Miller-Abbott Tube in Treatment of Ileus. N. R. Wyndham.—p. 62.

Surgical Hazards in Cholecystitis and Cholelithiasis.—Muir says that when surgical treatment is carried out for gallbladder disease in the absence of inflammation and complications it is attended with a low mortality rate of 2.15 per cent. When the gallbladder is inflamed the mortality rate for surgical treatment rises sharply to 18.4 per cent. In the presence of common duct stones, with or without jaundice, the mortality rate was 20.5 per cent. The controversial question of the best time for operation in cases of acute cholecystitis is discussed. From 5 per cent to 20 per cent of cases of acute chelocystitis will not subside and progress to gangrene and perforation. In these cases conservative surgery at an early stage will diminish the risk.

British Medical Journal, London

2:931-974 (Dec. 21) 1946

*Survey of Outcome of 20 Cases of Hemophilus Influenzae Meningitis Related to Bacterial Type. K. Zinnemann.—p. 931.
Infections of Nervous System Occurring During Epidemic of Influenza B. A. D. Leigh.—p. 936.
Allergic Reactions to Penicillin. A. L. Suchecki.—p. 938.
Neuromyelitis in Mumps. R. E. Church.—p. 941.
Conservative Treatment of Acute Perforated Peptic Ulcer. A. Hedley Visick.—p. 941.
Inoculation Experiments Against Typhus in Afghanistan. Z. Berke. —p. 944.

Outcome of Hemophilus Influenzae Meningitis Related to Bacterial Type.—Zinnemann presents reports of 20 cases of Hemophilus influenzae meningitis in which various methods of treatment were employed. The survey is the result of inquiries made at hospitals from which strains of H. influenzae were received for typing. The first point emerging from this survey is that reports of H. influenzae meningitis occurring in 20 children, of which 19 were caused by Pittman's type b and the twentieth by H. influenzae of the respiratory group, could be collected in a small area in less than two years. This would seem to indicate that the condition is not as rare as the scarcity of case reports indicates. The second point is the varied nature of the symptoms. Of 5 children treated only with sulfonamides, 1 recovered. Fifteen children had combined sulfonamide and penicillin treatment, and of these 8 recovered. In view of the good results reported from specific H. influenzae type b rabbit serum, the author thinks that this should be given in addition to the combined sulfonamide and penicillin treatment.

J. Obst. & Gynaec. Brit. Empire, Manchester

53:405-484 (Oct.) 1946

Superiority of South African Negro or Bantu as Parturient. O. S. Heyns.—p. 405.
The Blood in Pregnancy: Part I. Hemoglobin Level. M. H. Roscoe and G. M. M. Donaldson.—p. 430.
Stillbirth and Neonatal Death: Clinicopathologic Study. Mary Evans and G. S. Smith.—p. 440.
*Primary Carcinoma of Fallopian Tube: Report of 4 Cases. G. Bancroft-Livingston.—p. 453.
*Weather Changes and Eclampsia. N. Sapeika.—p. 461.

Primary Carcinoma of Oviducts.—Bancroft-Livingston presents the histories of 4 patients with carcinoma of the uterine tube and analyzes 33 cases that were collected from the literature. He emphasizes the difficulty of diagnosis and the bad prognosis in almost all cases. In none of the 4 reported cases was a correct clinical diagnosis made, and only twice in the collected group of 33. The difficulty of preoperative diagnosis does not seem amenable to resolution until the condition is more frequently borne in mind by clinicians, and doubtful cases in which symptoms persist after palliative treatment are subjected to laparotomy. Hysterosalpingography may occasionally be of value in differential diagnosis. Radical surgery is undoubtedly the best treatment.

Weather Changes and Eclampsia.—Since many obstetricians are of the opinion that a change in the weather may be of importance in the development of eclampsia, Sapeika investigated this factor in 45 cases of eclampsia that were observed in Cape Town, where eclampsia is comparatively frequent. Season itself does not appear to have any influence and, as far as weather changes are concerned, correlation could not be found between the onset of antepartum eclampsia and meteorologic factors.

Lancet, London

2:891-930 (Dec. 21) 1946

*Pneumonoconiosis in South Wales Anthracite Miners. C. G. Gooding. —p. 891.
*Steep Wave Electroplexy. E. B. Strauss and A. MacPhail.—p. 896.
Psychotherapy of Ulcerative Colitis. R. West.—p. 899.
*Folic Acid in Tropical Sprue: Report of Case. P. Manson-Bahr and W. Clarke.—p. 903.
Sauerbruch Cineplastic Amputation. R. K. Magee.—p. 904.
Retinal Mechanism of Vision. F. W. Edridge-Green.—p. 906.

Pneumonoconiosis in Anthracite Miners.—This report by Gooding is based partly on clinical experience provided by examination of many hundreds of anthracite miners during the last twenty years and partly on the necropsy findings in 592 deaths among patients with silicosis. Associated tuberculosis was present in nearly a fourth of 592 certified miners who died and in 28 per cent of 516 silicotic deaths. Tuberculosis which accompanies pneumonoconiosis often lacks its usual features, and it is probable that more detailed investigation would reveal tuberculosis in a much greater proportion of silicotic miners. Emphysema was another common accompaniment of advanced silicosis, and it is responsible for much of the disablement in these men. About half of the silicotic deaths were due to cardiac failure and half to infection, chiefly tuberculosis. Signs of embarrassment of the right side of the heart were often found in the men with more advanced pulmonary lesions. This series of cases offers no evidence that there is an increased incidence of primary lung cancer in pneumonoconiotic anthracite miners. Men with clinically recognizable tuberculosis have a particularly poor prognosis, but many of those certified in the early stage survive for many years.

Steep Wave Electroplexy.—According to Strauss and MacPhail the object of the steep wave type of electroplexy or electric convulsion therapy is to produce therapeutic convulsions with minimal discomfort to the patient, minimal damage to nervous tissues, minimal disagreeable after-effects and minimal risk of extraneous accidents. The authors briefly review their previous work on electroplexy to indicate the factors which led them to construct a new type of apparatus. The technical and electrophysiologic advantages of steep wave current derived from condenser discharge are assessed against the effects of currents with other wave forms of lower frequencies (including simple alternating currents). The authors describe the construction of the apparatus and its use and outline the clinical advantages to be expected from steep wave electroplexy.

Folic Acid in Tropical Sprue.—Manson-Bahr and Clarke present a case of tropical sprue which had resisted the usual treatment for two years. After 10 mg. of folic acid had been given by mouth daily for five days there was a great improvement, which was maintained after the folic acid was discontinued. Perhaps folic acid may provide the switch by which the vicious circle of these diseases can be reversed, after which further recovery can continue without its aid.

Medical Journal of Australia, Sydney

2:757-788 (Nov. 30) 1946

Fundamental Principles in Medical Practice. A. E. Coates.—p. 757.
Malaria Survey at Wewak, New Guinea. I. M. Mackerras and J. E. C. Aberdeen.—p. 763.
Primary Carcinoma of Jejunum, with Report of Case with Fourteen Months' Survival to Date. J. L. Deacon.—p. 771.

Lyon Chirurgical, Paris

41:385-512 (July-Aug.) 1946

Effects of Vascular Lesions on Lesions of Peripheral Nerves. P. Wertheimer —p. 385.
Surgical Eventualities in So Called "Medical" Icterus. P. Mallet Guy and R Jeanjean —p. 389.
Chronic Pancreatitis and Diabetes Mellitus. A. Guibal and A. Courty. —p. 407.
*Acute Calculous Cholecystitis in Children. C. Clavel and J. Dumas —p 411.
Penicillin in Treatment of Acute Osteomyelitis L. Tavernier and Lanier —p 430
Recklinghausen's Disease Removal of Parathyroid Adenoma P. Mallet-Guy, J Feroldi and J Sautot —p 439

Cholecystitis in Children.—Clavel and Dumas report 2 instances of acute calculous cholecystitis in boys aged 7 and 8 They also report data on 102 cases of biliary lithiasis in children between the ages of less than 1 and 15 years, 32 of whom were boys, 48 girls and 22 not specified. A clinical study of 22 cases is presented. The incidence of biliary lithiasis is higher among boys than among girls before the age of 10 years. It is often associated with appendicitis and consequently may not be recognized One should think of cholecystitis when one is about to establish a diagnosis of subhepatic appendicitis. The gallbladder may often be felt on palpation under anesthesia at the start of the intervention, even if it could not be palpated on preoperative clinical examination

Presse Médicale, Paris

54:697-716 (Oct 26) 1946

Mechanism of Bile Production in Organism H. Benard, A Gajdos, M Polonovski and M Tissier —p 697.
Possibility of Prolonged Infusion of Penicillin by Way of Sternum. G Giraud and T. Desmonts —p 698
Statistical Study on Results of Penicillin Therapy. A. Chevallier, C Vaille, P Chassagne and M. Giraud —p 698
Influence of Anesthesia with Pentothal on Blood Coagulation. A Sicard, C Nordmann and Y. Sibaud
*Penicillin Treatment in Hospital in 250 Women with Gonorrhea. J. R. Debray —p 700.
*Symptomatology of Meningitis V Vujic —p 702
Dead Tubercle Bacilli and Cutaneous Allergy to Tuberculin A. C. Maclouf —p 702

Penicillin Therapy of Gonorrhea in Women.—Debray observed 19 failures in the course of penicillin therapy of 250 women with gonorrhea. The injections had been without accidents, but 3 women had developed severe metrorrhagia lasting two or three days. Observations on the 19 patients who had failed to respond to penicillin therapy revealed as local causes of the failure persistent urethritis, skenitis, cervicitis and bartholinitis and such general causes as extreme severity of the process, primary or secondary syphilis and obesity. Other possible causes of failure may have been old adnexitis, old metritis and abortions The author concludes that failures are much more frequent in the penicillin therapy of gonorrhea in women than is the case in men

Symptomatology of Meningitis.—Vujic directs attention to two new meningeal symptoms: tonic reflex movements provoked by sufficient and sudden bending of the head of the recumbent patient. The first is adductosupination of the feet with inside rotation of the legs (reflex of rotation). The second consists in pronation of the upper extremities (meningeal sign of pronation). The described reflexes appear in meningeal states before the neck sign of Brudzinski

Dermatologica, Basel

93:113-188 (No 3) 1946

Aspects of Generalized Exfoliating Erythrodermias, with Especial Consideration of Chronic Idiopathic Form Anna Lutz —p 113
Epidermolysis Bullosa Dystrophica with Dominant Heredity and with Great Differences in Manifestations K Hensler —p 155
*Sensitivity of Skin to Soap in Eczema C H Beek —p 167.
Prickly Heat. R. D G P Simons —p 172
Form Changes in the Gonococcus Caused by Penicillin G Simkovics —p 183

Sensitivity to Soap in Eczema.—Beek and his associates tested skin sensitivity to soap of patients with eczema and of normal controls Significant differences could not be established between the two groups There was likewise no difference in the irritating effects of various pure soaps, but commercial soaps occasionally caused irritation, probably because perfumes had been added

Prensa Médica Argentina, Buenos Aires

33:2199-2244 (Nov. 1) 1946. Partial Index

Surgical Treatment of Angina Pectoris J. Estella.—p 2199.
*Bronchial Adenoma. Study of 12 Cases Treated by Pulmonary Resection. F. E P. Tricerri, L Langer and E. Naclerio —p. 2207.
Symptomatology and Treatment of Paroxysmal Tachycardia. J. Pombo. —p 2217.
Coexistence of Disease of Biliary Bladder and Duodenal Ulcer. Teresa Malamud, N. Moguilner and A. Lisman —p. 2224
Poliomyelitis: Second Contribution to Study of Epidemic Prevailing in Argentina in the Years 1942 to 1943. D. Vivoli and N. S. Loizaga —p 2227.

Pulmonary Resection of Bronchial Adenoma.—Tricerri and his associates report 12 cases of bronchial adenoma which were cured by pulmonary resection, 8 of them by pneumectomy and 4 by lobectomy. They stress that bronchial adenoma is a surgical problem, owing to its extrabronchial extension, its potential malignancy and the irreparable damage it may produce by obstructing the distal portion. The extent of the pulmonary resection must be decided in each individual case in the course of the operation in accordance with the anatomic conditions in the extrabronchial part and the presence of metastases in the lymph nodes of the pulmonary hilus. Bronchoscopy is of great importance in the diagnosis

Nordisk Medicin, Gothenburg

31:2187-2238 (Sept 27) 1946. Partial Index

*Cardiac Disorders in Polyarthritis A Appelgren.—p 2187.

Hospitalstidende

Intended and Undesired Effect in 191 Cases of Tapeworm Treated with Extractum Filicis in Doses of Up to 15 Gm. T Espersen.—p 2191
*Congenital Familial Anhidrosis and Neurolabyrinthitis H. F. Helweg Larsen and K Ludvigsen —p. 2198.

Duodecim

Effective and Ineffective Pneumothorax Treatment. T Laes.—p 2203.
Quantitative Determination of Albumin Content in Cerebrospinal Fluid and Its Significance O. H. Meurman —p 2210

Hygiea

Regeneration of Striated Musculature: Method of Experimental Investigation N. Grefberg —p 2213.
Effect of Carbohydrate and Protein Deficiency on Alkaptonuria and of Liver Injections and Vitamin B. C Ekelund —p 2215

Cardiac Disorders in Polyarthritis.—Appelgren studied cardiac complications in 205 cases of chronic and 106 cases of acute polyarthritis Ages up to 60 are included, as the frequency of cardiac lesions in patients aged 50 and those aged 60 varies but slightly. Chronic polyarthritis, primary and secondary, dominate in the older age groups, acute polyarthritis in the younger age groups. Both acute and chronic forms are more frequent in women than in men, the proportion on the whole being 3:2 In acute polyarthritis cardiac complications occur about twice as often in women as in men, in the primary and secondary chronic forms about equally often in men and women. No definite relation was demonstrable between cardiac complication and the increased sedimentation reaction seen in about three fourths of all cases, acute and chronic. Cardiac disorders were established in 45 2 per cent of the primary chronic cases, 47 7 per cent of the secondary chronic cases and 40 per cent of the acute cases. The similarity of the results in the three different groups may indicate that the three types are to be regarded as different forms of the same disorder, depending on violence of infection, constitution and manner of reaction

Congenital Familial Anhidrosis and Neurolabyrinthitis.—Helweg-Larsen and Ludvigsen say that in 14 of the members of the family described with congenital familial anhidrosis the deficiency depends on a greatly reduced number of sweat glands, the existing glands being hypertrophic. Neurolabyrinthitis appears at the age of from 35 to 45. There are no dental anomalies, defective growth of hair, ozena or cranial deformities. The symptom complex thus has few features in common with that in anhidrosis hypotrichotica. Salt deposits are characteristic, in the milder cases as grains or rings of salt crystals, in some instances as an extensive salt crust. The defect is transmitted by simple dominant inheritance and is assumed to represent a distinct hereditary symptom complex.

Book Notices

The National Formulary. National Formulary VIII. N. F. VIII. Prepared by the Committee on National Formulary under the supervision of the Council, by Authority of the American Pharmaceutical Association. Official from April 1, 1947. Eighth edition. Fabrikoid. Price, $7.50. Pp. 850, with illustrations. [Distributed by Mack Printing Co., 20th and Northampton Sts., Easton, Pa.] American Pharmaceutical Association, 2215 Constitution Ave., Washington 7, D. C., 1946.

The eighth edition of the National Formulary was made available the latter part of 1946. It supplants the seventh edition, published in 1942, and will succeed to official status April 1, 1947. The National Formulary is one of the "official" publications that provide legal standards for drugs and medicinal preparations marketed in this country The new formulary is of special interest because of its abandonment of many useless articles described in former editions. This trend reflects some of the basic changes in drug therapy that have come about during recent years. Mainly this is manifest by replacement of outmoded crude botanicals and biologic products with highly purified extracts and synthetic compounds. Some irrational combinations of drugs have been supplanted by more simplified formulas, though some, not above criticism in this respect, have been retained to provide standards for legal control of preparations of this type that remain on the market. The new formulary contains eighty-two articles not previously included, some of which represent transfers from U. S. P. XII. Other improvements of the eighth edition are to be found in the preference given for English titles and alphabetical arrangement and in greater emphasis on the metric system by parenthesis of the approximate apothecaries' equivalents of dosage. It also includes a table of approximate dose equivalents with an explanatory statement that has been adopted jointly by the Council on Pharmacy and Chemistry and the respective committees of the U. S. Pharmacopeia and the National Formulary. This cooperative step is in keeping with the prior adoption of the metric system for New and Nonofficial Remedies by the Council on Pharmacy and Chemistry. The new formulary, more than ever, will be entrenched as a recognized source of information on therapeutic agents. It is hoped that further deletions of outmoded articles may be effected in the next edition.

Stimulyatsiya zazhivleniya ran i yazvennykh protsessov: Itogi chetyrekh let raboty no teorii i praktike stimulyatsii zazhivleniya ran i yazvennykh protsessov Sbornik 2. Pod redaktsiey i s predisloviem Prof. D. I. Goldberga. [Stimulation of Healing of Wounds and Ulcer Processes: A Summary of Four Years' Work on Problems of the Stimulation of Healing Wounds and Ulcer Processes with Ointments Containing Embryonic Emulsions. A Symposium Edited and Supplied with a Foreword and Summary. Article by Prof. D. I. Goldberg.] Paper. Price, 30 rubles. Pp. 266, with 38 illustrations. Tomsk: Izdanie Tomskogo Meditsinskogo Instituta, 1946.

The volume represents a symposium by the research workers and clinicians of the Tomsk Medical Institute on the effect of therapy with embryonal tissues on the healing of wounds. Embryos were obtained in the process of slaughter of cattle, swine and horses and were prepared under strict aseptic precautions. To 200 cc. of chopped up embryonal tissue was added 100 cc. of a vegetable oil or cod liver oil, 5 to 10 cc. of xeroform, and petrolatum or oil to make 1,000 cc. The investigators emphasize a rapid improvement in the appearance of the wounds so treated, a more rapid epithelization and healing. They speculate that the stimulating effect of the embryonal emulsion is probably the result of raising the reactivity of the tissues in hypoergic and anergic types of wounds and to the desensitizing effect of the stimulating substances in hyperergic types of wounds. Treatment with embryonal emulsion was particularly successful in burns of the second and third degree and in chilblains. This therapy, however, is definitely contraindicated in acute inflammatory processes, in the presence in the wound of necrotic masses or of extensive suppuration, foreign bodies and bone fragments. The authors emphasize that treatment with embryonal emulsion is in no sense a substitute for correct surgical intervention. They consider the method only as an auxiliary method. It must follow active surgical treatment of the wound and be combined with general and local antibacterial therapy, administration of vitamins and proper nourishment.

Medical Social Service in Tuberculosis Control. Miscellaneous Publication 37, Federal Security Agency, United States Public Health Service. Paper. Price, 10 cents. Pp. 22. Supt. of Doc., Government Printing Office, Washington, D. C., 1946.

Many of the economic and social problems which loom so large for the victim of tuberculosis may be dealt with by the properly trained medical social worker. As a liaison between the physician, the public health nurse, the community as a whole, the patient's family and the patient himself she can perform a valuable service. This booklet, published by the Tuberculosis Control Division of the Public Health Service, outlines the significant phases of the tuberculosis problem and sets forth the standards which should be met by the medical social worker in her job of assisting the tuberculous patient to adjust his life to the changes necessarily wrought by his physical condition. Her role in case finding, medical care, isolation and after-care, consultations with the various organizations concerned with treatment of the tuberculous and rehabilitation of the patient is most significant. Here is an opportunity for real social service, and more qualified women are needed for the extensive medical social work training program. Such workers can do much to alleviate the economic, social and emotional problems which follow in the wake of tuberculosis.

Applications of Germicidal, Erythemal and Infrared Energy. By Matthew Luckiesh, D.Sc., D.E., Director, Lighting Research Laboratory, General Electric Company, Nela Park, Cleveland. Cloth. Price, $5.50. Pp. 463, with 161 illustrations. D. Van Nostrand Company, Inc., 250 Fourth Ave., New York 3, 1946.

This is a compilation of knowledge and information gleaned through research and studies of the author and his colleagues in the field of ultraviolet, visible and infrared radiation. The subject matter is expertly assembled and the book is very readable. The physiologist, general practitioner and physiatrist will be more interested in the biologic effects of radiant energy than in the nonmedical applications. One chapter deals with erythema and tan, another with artificial sunlight, and a third with units and terminology. These chapters contain an abundance of selected and specialized information on the biologic effects of ultraviolet and infrared radiation. The data are in the form of tables, charts and graphs which are useful for reference. Various sources of radiation are described, including lamps which were used many years ago. The modern fluorescent lamps and newer sources of ultraviolet and infrared radiation are also explained. Their electrical and radiation characteristics are given.

One application of ultraviolet radiation advocated is the disinfection of air. The idea provokes one's imagination and any one who thinks about it hopes that a method can be developed which will prevent cross infection of disease in places where people congregate. The author devotes at least 200 pages to this subject. Another organization, the Council on Physical Medicine of the American Medical Association, has made a study of this problem too and its opinions are expressed in an article "Acceptance of Ultraviolet Lamps for Disinfecting Purposes" which appeared in The Journal in June 1943. The opinions of the Council differ from the ideas expressed by the author of this book. Committees of the National Research Council and of the American Public Health Association feel that the use of ultraviolet radiation for reducing certain infectious diseases is still purely in the experimental stage.

When reading the volume one cannot help but be impressed by the author's enthusiasm for promoting new uses for products manufactured by the company of which he is the director, the Lighting Research Laboratory. Psychiatrists will find this book a valuable addition to their libraries as a reference on the subject of radiation.

Suggestions for Courses in General Chemistry. By L. Jean Bogert, Ph.D. A Teachers' Guide Prepared for Use with the Sixth Edition of Bogert's Fundamentals of Chemistry and the Fifth Edition of Bogert's Laboratory Manual of Chemistry. Paper. Pp. 14. W. B. Saunders Company, W. Washington Sq., Philadelphia 5; 7 Grape St., Shaftesbury Ave., London, W. C. 2, 1946.

The suggestions presented in this pamphlet, which contains outlines for various courses in general chemistry, might better be left to the judgment of the instructor.

Symposia on Present Day Social and Economic Aspects of National Health and the United Nations Educational, Scientific and Cultural Organization, and American Participation in Its Activities: Papers Read Before the American Philosophical Society Annual General Meeting April 18, 19, 1946. Proceedings of the American Philosophical Society held at Philadelphia for Promoting Useful Knowledge, Volume 90, Number 4. Paper. Price, $1. Pp. 251-317. American Philosophical Society, Independence Square, Philadelphia 6, 1946.

This collection of papers read before the American Philosophical Society in April 1946 contains a considerable amount of worthwhile observation and thinking on the general subject of our national health. The introductory paper, "The Health of the American People," by Richard Harrison Shryock, is a historical survey of the developments in medical practice from Colonial days. He notes the progress which has been made but also presents the problems which are yet to be met. "The price of medical progress," he observes, "like that of liberty, is eternal vigilance."

"Mental Hygiene," by Dr. Winfred Overholser, presents a picture of what is held to be the largest and most pressing problem in the entire field of public health—mental health. Dr. Overholser speaks of the importance of psychosomatic medicine, of progress being made in group therapy, of narcosynthesis, of shock therapy, of child guidance and of industrial psychiatry. He stresses the need for recognition of psychiatry as an essential part of general medicine and urges that research in this field be more vigorously pressed.

I. S. Falk's paper, on "The Role of Government Agencies in a National Health Program," cites the lack of coordination of public health functions at the local, state and federal levels and approaches the issue of government medical care from the administrative point of view. He prescribes general methods of administration for federal compulsory health insurance, stating that medical care would function on a consumer basis at the local level. He presupposes the adoption of sickness and disability programs, recommending that state governments be used as agencies of the national government in the administration of a medical care insurance system. His proposals are broad and general, and they require much elaboration before they acquire feasibility.

Dr. Howard A. Rusk presents a timely report on "Convalescence and Rehabilitation" in which he urges large scale adoption of the Veterans Administration programs in civilian hospitals, so that greater progress can be made in the rehabilitation of the large numbers of crippled and otherwise physically handicapped citizens in addition to our war veterans. The injured industrial worker as well as the wounded veteran needs the help of a well developed rehabilitation program if he is to be conditioned for normal function and adjustment in his community.

In "The Place of the Physician in Modern Society" Henry E. Sigerist writes that it is the role of the physician to perform four major tasks. These are the promotion of health, the prevention of disease, the restoration of a patient's health and rehabilitation of the patient. The physician, says Professor Sigerist, is scientist, educator, social worker, friend and leader in the progress of our civilization.

W. A. Milliman, in his paper "The Relationships Between Governmental and Private Responsibilities for National Health," presents the problems which have been left virtually untouched and unsolved by the erstwhile proponents of national compulsory health insurance. The problem of controls and certain abuses of such a system, the lack of candor on the part of those who would have the government step into the practice of medicine, the effect of a national health insurance system on the quality and supply of medical service, and the position of the medical profession are dealt with objectively and critically. His observations are refreshing and worthy of consideration by those who would shy away from the practical problems of national health insurance. He discusses too the temporary cash disability benefits and presents a sound argument for the employer rather than the state or federal government as the ideal person for the responsibility of paying claims. All who are interested in the question of medical care insurance would do well to read this paper.

A dramatic climax to the symposium is the paper by Major Gen. Warren F. Draper of the U. S. Public Health Service, entitled "Public Health Experiences in the European Theatre of Operations." In addition to describing the work done by the G-5 Civil Affairs Division in dealing with the problems of civil governments and civilians in the devastated war areas, Major General Draper gives a harrowing account of what he saw in the German concentration camp at Buchenwald.. This "extermination factory" was only one of many, and the horrors which he describes are something we cannot afford to ignore or forget.

Blodets askorbinsyre hos sunde og syke. Av Johannes Hagtvet. [Ascorbic Acid Content of Blood in Health and Disease.] Skrifter utgitt av Det norske Videnskaps-Akademi i Oslo, I. Mat.-Naturv. Klasse, 1945, No. 2. Paper. Price 9 kroner. Pp. 121, with 45 illustrations. I Kommisjon hos Jacob Dybwad, Torvet 2, Oslo, 1945.

This monograph deals with the methods, scope and results of a study of the ascorbic acid content of the blood in health and in disease. The work has been awarded the Skjelderup gold medal by the medical faculty of Oslo university. In 722 healthy subjects the yearly curve of the ascorbic acid in the blood reached its maximum in August and September, just like the ascorbic acid in the potato, which suggests that the potato is a main source of vitamin C nutrition of the Norwegian urban population. Extensive determinations are reported of ascorbic acid concentration in the blood in various diseases, and a chapter is devoted to clinicotherapeutic considerations. An English summary gives the main results.

Outline of the Spinal Nerves. By John Favill, A.B., M.D., F.A.C.P., Clinical Professor of Neurology (Rush), University of Illinois College of Medicine, Chicago. Cloth. Price, $3.75. Pp. 191, with illustrations. Charles C Thomas, 301-327 E. Lawrence Ave., Springfield, Illinois, 1946.

This is a unique reference book which attempts to supply full information on motor functions. It consists of lists of roots, nerves and muscles and of movements arranged in such a manner that one can start at any point and trace the nerve pathways. Supplementary data and drawings add to the ease of reference. In his preface Dr. Favill expressed the view that errors would be inevitable and that information on them would be appreciated. It is unfortunate that he died suddenly just about the time of the appearance of this volume, and it is to be hoped that some one else will continue his work and incorporate in future editions any corrections or improvements which are discovered by those who use the book.

The Royal Cancer Hospital Mechanically Sorted Punched Card Index System. Compiled by D. W. Smithers, M.D., M.R.C.P., D.M.R., K. M. H. Branson, M.B., F.R.C.S., and H. O. Hartley, Ph.D. Paper. Pp. 102. Royal Cancer Hospital, London, S. W. 3, 1945.

The system of recording information about cancer patients so that it may be sorted mechanically by means of punched cards is on preliminary trial in the Royal Cancer Hospital and the hospitals which cooperate with it in cancer work, preliminary to adoption on a more permanent basis. The book describes in detail the filling in of special cards and the coding for mechanical sorting. The book should be studied by all concerned with the keeping of adequate records of the observations on cancer patients and the results of treatment. The workings of the Royal Cancer Hospital system will be followed with special interest because it covers many hospitals. The advantages of uniformity of records in cancer clinics appear so obvious as to merit careful consideration, especially in large cancer centers.

Fundamentals of Chemistry. By L. Jean Bogert, Ph.D. Sixth edition. Cloth. Price, $3. Pp. 571, with 155 illustrations. W. B. Saunders Company, W. Washington Sq., Philadelphia 5; 7 Grape St., Shaftesbury Ave., London, W. C. 2, 1946.

This book has undergone another edition, primarily designed for those concerned in medicine, nursing and public health; it also covers the related sciences. It has been brought up to date.

Laboratory Manual of Chemistry. By L. Jean Bogert, Ph.D. Fifth edition. Loose-leaf. Paper. Price, $1. Pp. 196, with 27 illustrations. W. B. Saunders Company, W. Washington Sq., Philadelphia 5; 7 Grape St., Shaftesbury Ave., London, W. C. 2, 1946.

This manual provides simple experiments for the author's textbook "Fundamentals of Chemistry," to which it forms a valuable adjunct.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

GROWTH PROMOTING AGENTS

To the Editor:—I should like information on the probable effects of oral testosterone in aiding the growth of an 11 year old boy who is 52½ inches (132 cm.) in height and has no evidence of obesity or hypogenitalism or other endocrine disturbance, with normal epiphysial development. Would this cause early epiphysial closure with further stunting of growth?

Emil Rothstein, M.D., Wood, Wis.

ANSWER.—According to tables given in "Holt's Diseases of Infancy and Childhood" the range of normal height for boys 11 years of age is from 53 3/10 to 57 1/10 inches (135 to 145 cm.), while the patient mentioned is 52½ inches tall, only slightly shorter than the smallest of "normal individuals."

A few of the many causes of dwarfism are cretinism, chondrodystrophy, hypopituitarism, chronic malnutrition (including diabetic dwarfism) and renal insufficiency. Dwarfism caused by ovarian insufficiency has been described by Varney, Kenyon and Koch. It is not known definitely that a corresponding hypogonadal dwarfism occurs in the male. In fact, when hypogonadism in males occurs before puberty they are usually of normal or greater than normal height. In addition to the definite entities mentioned, there is a condition in which a so-called normal or pituitary dwarf seems to be normal in all respects save size. Such a normal dwarf will probably have an epiphysial age which corresponds closely with his chronologic age. It should be possible to demonstrate by roentgenologic examination of the average boy 11 years of age the external condyle of the humerus and the tubercle of the tibia (tables are given in Holt).

Difficulties arise in the evaluation of growth promoting agents because of the large number of unpredictable variations in the rate of growth that occur normally during childhood and adolescence and because of the poor correlation between height during the period of growth and height ultimately attained. Furthermore, it is difficult, if not impossible, to decide before a boy has reached the age of 15 whether hypogonadism is present or whether development is merely somewhat slower than is normal. This uncertainty has led to much confusion in the interpretation of the effects of various endocrine preparations on prepuberal children.

Agents which have been used in an attempt to stimulate growth include thyroid, pituitary growth hormone, chorionic gonadotropin and testosterone. Reports have been made of the effectiveness of a combination of thyroid and growth hormones. In such cases one cannot be certain which agent was responsible; and unless hypothyroidism is present it is doubtful whether thyroid is of value (Shelton). Cretinism, of course, responds dramatically to treatment with thyroid. A pituitary growth hormone has yet to be prepared which is of value in the treatment of patients. Chorionic gonadotropin from whatever source seems to exert its effects on growth by stimulation of the testes to form testosterone. A number of studies of the effects of testosterone on the growth of boys have been made; but because of the relatively small number of subjects and the inherent difficulty of obtaining adequate controls, final conclusions should not be drawn. Clinical studies suggest, however, that testosterone usually will cause acceleration of growth both of quantity of muscle and of length of some bones. Evidence also suggests that epiphysial closure may be hastened by testosterone, and cases of dwarfism apparently secondary to the formation of male hormone by tumors in childhood have been reported. It is impossible to predict which of these two effects of testosterone will predominate in any given case; it is impossible to say whether the increased rate of growth of bones or the earlier closure of epiphyses will have the greater effect. Therefore it may be questioned whether administration of testosterone will have any effect whatever on the ultimate height attained at maturity.

Well controlled studies of rats and mice indicate that the effect of testosterone on the growth of bone is minimal. Therefore it is suggested that administration of testosterone in a case such as the one about which inquiry was made be regarded as experimental and that the study be controlled as well as possible.

PITRESSIN FOR HYPERTENSION

To the Editor:—An article appeared in a lay magazine quoting Dr. J. Q. Griffith Jr. of the University of Pennsylvania on the use of pitressin in hypertension. Please discuss the rationale of this therapy.

G. E. Bowdoin, M.D., Elkhart, Ind.

ANSWER.—The rationale of the use of pitressin in hypertensive disease is based on the observation that the serums of hypertensive patients contain a substance capable of suppressing water diuresis in rats and the suspicion that the posterior lobe of the pituitary produces this antidiuretic hormone. Repeated injections of aqueous pitressin, given daily, increase the antidiuretic titer of the urine for a few days, but subsequently the urine attains diuretic properties. It was suggested that this effect is due to the appearance of an antihormone. Injections of small doses of pitressin tannate in oil weekly for three weeks and then monthly for three months are reported to have resulted in considerable benefit in patients selected because (1) bioassay for antidiuretic hormone is positive, (2) bioassay for gonadotropic substance in serum is negative at the level of 330 mouse units per hundred cubic centimeters and (3) renal function is normal (Griffith, J. Q., Jr.; Padis, N., and Anthony, E.: Selection of Patients with Arterial Hypertension for Treatment by Repeated Injections of Pitressin, Am. J. M. Sc. **212**:31 [July] 1946). The results parallel those obtained with pituitary irradiation. Therapy with pitressin is applicable to only a few cases of hypertensive disease in which pituitary involvement is clearly demonstrated It will probably not solve the major problem of most hypertension, for there are many and various etiologic patterns.

CRETINISM AND MARRIAGE

To the Editor:—A woman aged 20 was diagnosed as a cretin shortly after birth. She has been given controlled doses of thyroid all her life and at present is using 1 grain (65 mg.) per day. She has some speech difficulties and wears an upper plate because of malocclusion. She has difficulty with fine motions of the hands but is able to write and to play the piano. Her weight is about normal for her height, and the skin and hair are only slightly suggestive of hypothyroidism. Her intelligence is apparently close to normal. She has done clerical work in her own home and has carried on correspondence as a member of a "letter club." She has finished the equivalent of a high school education under the tutelage of her mother, who is a trained educator and teaches underdeveloped children. The menarche occurred at 13 years of age; the menstrual periods are normal. The basal metabolic rate is within normal limits on the above thyroid dosage. The patient is contemplating marriage and has asked the following questions: 1. Is she likely to become pregnant? 2. In the event of pregnancy will the offspring be normal? 3. If the offspring are apt to be abnormal is a sterilization justified? What is the legal status of sterilization in a woman whose offspring are apt to be abnormal?

Sidney W. Raymond, M.D., Chicago.

ANSWER.—1. Since the patient is menstruating at regular intervals and would appear from the description given in the inquiry to be normally developed sexually, it is probable that she is fertile and can bear children. There is, of course, no way of being absolutely certain that any woman is capable of becoming pregnant until actual trial is made.

2. In the event of pregnancy the chances are that the offspring will be normal. The risk of the patient's giving birth to a cretinoid child is slightly greater than it would be if her thyroid gland was normal but the risk is small, so that it may be disregarded.

3. Since it is unlikely that the patient's offspring, if any, will be abnormal, sterilization is not justified. There would be no legal justification for such sterilization regardless of what the outcome of pregnancy might be.

CORONARY DISEASE AND FLYING

To the Editor:—A man aged 53 had a coronary occlusion two and one half years ago and recovered entirely from this attack except that he now has anginal pain on walking. Being a busy executive, he would like to fly long distances. Is there any danger when the plane attains a high altitude or when a sudden landing or an air pocket causes considerable loss of altitude? Are pressurized cabins or oxygen masks reasonable insurance against these risks?

M.D., Pennsylvania.

ANSWER.—The degree of coronary heart disease is most important. If angina pectoris is produced only by a considerable amount of effort, there would be no particular hazard in flying even at fairly high altitudes; but, if the coronary heart disease is severe and angina pectoris occurs at rest or on very slight exertion, there is a hazard not only from flying but from any other strain, great or small. Pressurized cabins and oxygen masks may reasonably be expected to reduce the risk of trouble in serious heart disease on flying at high altitudes, but not enough experience has been collected to warrant detailed statements of such preventive measures.

COSMETIC DERMATITIS

To the Editor:—A woman aged 36 has been a beauty parlor operator for several years. In August 1946 she developed a dermatitis on the fingers of the right hand. This gradually became worse and appeared on the fingers of the left hand. The lesions were accompanied with severe itching. She tried wearing rubber gloves but she could not work satisfactorily with them. However, when gloves were worn part of the time the lesions began to subside. When first examined three weeks after the onset, the patient presented patchy areas of dermatitis on the sides of the fingers and on the dorsum near the base of the nails. The lesions were dry and scaling and were thought to be subsiding. General physical examination was essentially negative. There were no other areas of dermatitis on the face, body or feet. Though the patient has been a beauty operator for several years, she has never had any cutaneous lesions before. New cosmetic items have not been used. A diagnosis of dermatitis venenata due to a cosmetic irritant was made. The patient was advised to stop working and not to use cosmetics. She was given mild tar ointment to apply twice daily. In the next five days the lesions disappeared almost completely and the itching subsided. On the fifth day she gave two finger waves without rubber gloves, using Hair Vita Finger Waving Lotion. In the next twelve hours she developed intense itching of both hands, including the palms. Many small papular lesions appeared on the lateral and volar surfaces of the fingers and palms, with a generalized redness of the skin of the hands. What substances in cosmetics are the common cause of contact dermatitis? What are the ingredients of Hair Vita Finger Waving Lotion? What other cosmetic preparations contain the same ingredients? Is skin testing and desensitization for these substances possible and successful? Of what value are the so called protective lotions which are rubbed on the skin previous to contact?

Lawrence O. Goodman, M.D., Marshalltown, Iowa.

ANSWER.—Cosmetic dermatitis usually appears abruptly and clears up in a reasonable time after contact with the sensitizer or the irritant has been discontinued. The eruption usually consists of erythema, edema, papules, vesicles, exudation, crusts and exfoliation. It tends to form patches with indefinite borders and is usually accompanied with pruritus. In chronic cases the skin becomes thickened, pigmented, infiltrated and fissured.

Dermatitis venenata produced by cosmetics is mostly due to an allergy on the part of the patient. The user was or has become sensitized to the cosmetic. However, there are chemicals which in certain concentrations will cause dermatitis of any one exposed to their action for a sufficient length of time. These are called primary irritants. Most of the chemicals used in cosmetics today are innocuous to most people.

It is impossible in so short a space to list all the primary irritants and sensitizers in common use in the various cosmetics. There are many excellent textbooks on the subject. Schwartz and Peck in their book on Cosmetics and Dermatitis, published by Paul B. Hoeber, Inc., in 1946, have a complete survey of modern cosmetics and their effects on the skin.

The exact constituents of Hair Vita Finger Waving Lotion have not been obtained. However, finger wave lotions have not materially changed in formulation for quite a few years. Hair Vita Finger Waving Lotion is apparently a cold wave lotion. Cold waving consists in applying solutions of chemicals to reduce and soften the hair so that it loses its elasticity and can take a curl. Then oxidizing solutions are applied to set the curl. In addition to this, usually 1 to 5 per cent solution of various gums or resins are applied to hold the curl. They also contain a small amount of alcohol for drying and perfume. The reducing agents are usually inorganic sulfides or thioglycolates. The oxidizing agents are usually iodides or "per" salts. The gums or resins commonly used are karaya, acacu, tragacanth, quince seed, sodium alginate, soluble shellac, chondrus or casun.

From the information contained in the inquiry, the lotion may contain sodium thioglycolate as a reducing agent. In recent years many cases of dermatitis have been found to be attributable to this substance. However, it is possible that the patient was sensitive to some other product used prior to the finger wave. In the past few years many wetting agents or synthetic detergents have replaced soap shampoos.

Skin testing, particularly the patch test, has become quite helpful in the search for the causal allergens. But the proper application of the patch test and the correct interpretation of the results have given some difficulty. Positive reactions have been known to occur with substances that had nothing to do with the causation of the eruption and, conversely, clinically proved allergens may give negative results. The reaction must therefore always be carefully correlated with other available data. It is especially important to ascertain the clinical effects of the removal of the substance and the clinical effects of reexposure.

Specific desensitization cannot be accomplished with satisfactory regularity at present. Some people become desensitized, others not. The use of protective lotions or creams of the nongreasy type may offer some protection in occupational dermatitis, but soap and water remove them and as a result have little value for a beauty parlor operator.

RENAL GLYCOSURIA

To the Editor:—A woman has a normal blood sugar value which ranges from 60 to 90 mg. per hundred cubic centimeters, and a low kidney threshold. What medicine can be used to control this low kidney threshold and glycosuria?

Kenneth A. Ohme, M.D., Mitchell, Neb.

ANSWER.—A diagnosis of renal glycosuria can be made if glycosuria consistently accompanies normal values for blood sugar, if pentosuria, fructosuria, lactosuria and galactosuria are excluded by tests described in any standard textbook of laboratory procedure and if the result of the glucose tolerance test is normal. This condition frequently is familial and hereditary and tends to be lifelong. The metabolic error is a failure of the renal tubules to reabsorb entirely the glucose in the glomerular filtrate. Loss of glucose in the urine may lead to mild symptoms of hypoglycemia or some loss of weight, but ordinarily the patient considers himself in good health and is unaware of his condition. Renal glycosuria will not develop into diabetes mellitus.

There is no drug capable of restoring the ability of the tubular cells to reabsorb glucose, and treatment is not indicated other than subsistence on a diet generous enough to compensate for the loss of glucose in the urine. Insulin therapy will only exaggerate the tendency toward hypoglycemia and may be dangerous. The "renal threshold" may be raised somewhat by any measure that will diminish glomerular filtration, such as dehydration or shock, but such a measure is obviously unpractical and would lead to harm.

The glycosuria that follows the administration of phlorhizin also is caused by failure of tubular reabsorption. However, the rate of loss of glucose is so great in this condition that ketosis and acetonuria result unless an adequate supply of carbohydrate is administered.

More information can be obtained in the following references:

Blotner, Harry, and Hyde, R. W.: Renal Glycosuria in Selectees and Volunteers, THE JOURNAL, June 12, 1943, p. 432.

Smith, Florence H., and Smith, K. A.: Normoglycemic Glycosuria Differentiated from Other Benign Glycosurias and Diabetes Mellitus, *Arch. Int. Med.* **60:** 119 (July) 1937.

Mirsky, I. A., and Nelson, Norton: Significance of Glycosuria, *Arch. Int. Med.* **71:** 827 (June) 1943.

Wilder, R. M.: Clinical Diabetes Mellitus and Hyperinsulinism, Philadelphia, W. B. Saunders Company, 1940.

SIALORRHEA AND MORPHINE ADDICTION

To the Editors:—What can be done to correct extreme salivation in a woman aged 69 suffering from a coronary sclerotic heart disease who has become addicted to morphine with atropine? Her daily dosage is about 1 grain (65 mg.)

M.D., New York.

ANSWER.—A relationship between salivation and the use of moderate or large doses of an opiate is not known. When physical dependence to an opiate exists, sialorrhea may occur during withdrawal. This is a temporary phenomenon.

A common cause of long-continued and severe salivation is the parkinsonian syndrome, whatever the etiology. In this patient, even though a well defined parkinsonism is not present, the administration of an atropine-like preparation in as large doses as can be tolerated might be tried.

The use of the word "addicted" in this and similar situations must be challenged. To assume that addiction exists, something more than the habitual use of a substance or pursuit of a practice must be present. Three criteria must be met: (1) loss of control with reference to a substance or practice, (2) harm in some form to the patient, to his group or to both and (3) condemnation by society of the use of the substance or pursuit of the practice. It seems unlikely that any but the first criterion, if that, can be met here.

Persons suffering from heart disease who have been placed on an opiate routine sometimes develop a habitual use over and above the therapeutic needs and may be considered addicts. Such an addiction can be corrected rather easily if we can control the patient and the environment. Sometimes, however, if we try to establish total abstinence from opiates the patient may exhibit signs and symptoms, including those of decompensation, which the physician inexperienced in the treatment of the abstinence syndrome may confuse with this picture. If he persists in his withdrawal regimen, serious decompensation, even death, may result.

It is debatable whether the administration of opiates to cardiac patients to the point of physical dependence is justifiable. Prolonged administration of small amounts after dependence has been established is not justified.

TREATMENT OF FASCIOLOPSIS INFECTION

To the Editor:—A patient, who was in the Army, had abdominal cramps and occasional diarrhea while in the South Pacific. Physical examination at that time apparently gave normal results. Since then there has been considerable loss of weight and a slight anemia. A stool examination revealed ova of Fasciolopsis buski. This diagnosis was confirmed subsequently by several laboratories. Two courses of hexylresorcinol have brought only temporary relief. Ova can still be recovered from the stool after the second course of treatment. Please outline the treatment of this disease.

Richard D. Falkenstein, M.D., Pampa, Texas.

Answer.—Fasciolopsis buski is an oriental fluke found in man chiefly in the small intestine and especially in the duodenum. It may be found attached in the stomach and upper part of the colon. Its geographic distribution south of Borneo is poorly known, although one might expect it exceptionally in the south Pacific islands. In the case described in the query, it is important to be certain of the differential diagnosis, especially from Fasciola hepatica, Fasciola gigantica and Echinochasmus perfoliatus.

Treatment of choice is with (1) tetrachlorethylene, (2) carbon tetrachloride or (3) beta-napthol. Hexylresorcinol is much less efficient, a cure rate of only 54 per cent being reported by McCoy and Chu (*Chinese M. J.* **51**:937 [June] 1937).

1. Chemically pure tetrachlorethylene is given in an adult dosage of 3 cc. in a single dose. Epsom salt 15 Gm. (½ ounce) should be given in a glass of water the night before treatment. The patient fasts the following morning and takes 3 cc. of the drug in gelatin capsules. Two hours later the patient repeats the Epsom salt, 15 Gm. in a glass of water. Transient dizziness and headache disappear with the action of the second dose of Epsom salt.

2. Chemically pure carbon tetrachloride is given in a dose of 3 cc. in a little water or milk. On the preceding evening the patient has a light supper of toast and milk, followed by an enema. On the morning of treatment the patient fasts until after good purgation has occurred. Two hours after the carbon tetrachloride the patient is given 15 cc. of Epsom salt in a glass of water. This drug is toxic and the patient should receive full dosage of calcium lactate or gluconate orally for four days before treatment. Contraindications are fever, alcoholism, cirrhosis of the liver and diseases of the kidneys or respiratory tract.

3. Beta-napthol must not be used in pregnancy or malaria. It is given in two doses of 0.2 Gm. each in gelatin capsules.

Reference: Faust, E. C.: Human Helminthology, ed. 2, Philadelphia, Lea & Febiger, 1939 p. 178.

PRESERVATION OF SPERMATOZOA

To the Editor:—Please give formulas for the preservation of sperm cells in viable form. A solution is needed for a "sperm bank" for research work on lower animals.

M.D., New York.

To the Editor:—Is there a way to preserve spermatozoa for use in artificial insemination? Most reports suggest that the semen be obtained from the donor in the office and used within an hour or so. This is not always possible, especially in a small town. If the sperm cell can be preserved, for how long will it be usable?

M.D., Texas.

Answer.—Sperm cells of different mammals exhibit great variability in periods of viability after collection of semen. Most information comes from investigations on sperm from livestock. Viability—i. e. capacity to show movement on proper handling—persists longer than the capacity to fertilize the egg.

According to Green, Winters and Comstock (Bull. 336, University of Minnesota Agricultural Experiment Station) sheep sperm for artificial insemination are preserved longest when equal quantities of semen and dilutor are mixed (dilutor monosodium acid phosphate 1 part, water 12 parts, 15.4 Gm.; potassium dihydrogen phosphate 3.2 Gm.; sterile distilled water 1 liter, calcium sulfate saturate). The p_H should be 7.0.

An egg yolk dilutor has been used successfully for bull semen by Lardy and Phillips (*Am. Soc. Anim. Prod. Proc.* **32**:219, 1939), and the method has also been used for stallion, ram and boar semen. A dilutor is made of equal volumes of fresh egg yolk and a sterile buffer (potassium dihydrogen phosphate 0.2 Gm. and monosodium acid phosphate 1 part, water 12 parts, 2 Gm., in 100 cc. of sterile distilled water). The p_H of the mixture should be approximately 6.75. One part of semen may be added to 3 or 4 parts of the buffer solution. Calves and lambs have been born after insemination with such diluted semen for six to seven days, but in field practice storage longer than forty-eight hours is not recommended. Storage of semen in the dilutor should be kept at temperature of about 41 F.

Good methods of preserving human spermatozoa for delayed artificial insemination are unknown. The following general principles can be stated: Storage must be at low temperatures and cooling should be gradual (temperatures below 41 F. are always used for animal spermatozoa); air should be excluded, perhaps by covering undiluted semen in small tubes with liquid petrolatum; changes in temperature should be slow. Human sperm have been retained in motile condition for several days in egg yolk solutions as with farm animals, but fertility is probably limited to twenty-four to thirty-six hours storage.

FIBER GLASS CLOTHING

To the Editor:—A boy aged 3 years is unable to wear wool garments because of an allergic skin reaction. It will be difficult to obtain satisfactory snow suits for him in winter. Good quality snow suits are available which are constructed of Byrd cloth (cotton) exterior with a woven cotton lining and an interlining of spun glass instead of ordinary wool. The interlining does not come in direct contact with the wearer because it is encased between the Byrd cloth exterior and the woven cotton lining. Can skin irritation from spun glass or fiber glass occur under these circumstances? Is this type of clothing desirable and safe for a child with a sensitive skin?

M.D., Illinois.

Answer.—Dermatitis from spun glass fabrics is in a large majority of cases due to direct physical irritation of the skin by the sharp glass fibers. Only rarely does a case of allergic dermatitis occur from whatever resins are used in forming the fibers from the spun glass. If the glass interlining does not touch the skin, dermatitis cannot occur from the glass itself. Clothing worn under the snow suit would also prevent contact of the glass fabric with the skin.

If the child's sensitivity is only to wool and not to other substances, such a garment as you describe should not irritate the skin.

DIAGNOSIS OF BLEPHAROCONJUNCTIVITIS

To the Editor:—A woman aged 70 has had an itching of the eyelids involving the conjunctivas for several weeks. Commonly used preparations such as mild silver protein, butyn, 1 and 2 per cent yellow oxide of mercury, holocaine ointment and boric acid solution give only temporary relief. *The patient has had similar attacks each summer for* the past three or four years but the present attack is prolonged and resists the ordinary measures. There is no inflammation in any of these tissues—just an annoying itching, a sort of essential pruritus. Her general health is fair. Her eyes are properly refracted. The condition does not seem to be allergic. Kindly advise me of any treatment that might relieve the condition.

Joseph A. Robinson, M.D., Darlington, S. C.

Answer.—This must be either a case of neurodermatitis common in older women or an allergy.

The fact that it has recurred for three or four years points to an allergy which is seasonal. The fact that it persists beyond the summer does not rule this out. With an allergy one sees follicles of various sizes in the lid conjunctiva, velvety tarsal conjunctiva or minute cystic-like follicles on the upper tarsal border. There may or may not be a stringy secretion. Conjunctival scrapings often reveal eosinophils.

The neurodermatitis condition most often presents wrinkled, brownish lid skin, with silvery scales and no conjunctival involvement other than dilated conjunctival blood vessels. The same picture has been caused by local sensitivity to cosmetics, soap or perfume.

The treatment consists in small doses of phenobarbital, cold compresses and, if the itching is very severe and not alleviated by cold compresses, the use of an ointment containing 1 per cent salicylic acid.

CHOLESTEATOMA

To the Editor:—Is there any medication which, by instillation or irrigation of the middle ear, will dissolve cholesteatomatous masses so that they can be removed easily from the external ear canal?

M.D., California.

Answer.—The middle ear cavity, which is the usual site of cholesteatoma, may be irrigated with increasing strengths of alcohol solution, starting with about a 50 per cent solution. This irrigation must be carried out with a special cannula the curved tip of which is inserted through the perforation in the drum membrane, which leads to the attic, the situation of most cholesteatomas.

It is better to use stronger, rather than weaker, alcohol solutions, because a cholesteatoma will swell if water is used as the irrigating fluid. The use of water in the ear in the presence of cholesteatoma may lead to serious consequences, because the cholesteatomatous mass may swell and, by pressure, expose the dura and inner ear to infection.

Ether has been used by some as an irrigating solution, but more discomfort is caused by ether than by alcohol.

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RICKETTSIALPOX—A NEWLY RECOGNIZED RICKETTSIAL DISEASE

II. Clinical Observations

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Reports of cases of an unclassified disease were first received by the New York City Department of Health toward the end of June, 1946. Most of the cases came from a single housing development covering three square blocks in one of the five boroughs of the city. As news of the disease spread among physicians, cases located in three other boroughs were called to our attention. This report of the clinical findings is based on the observation of 144 nonfatal cases. Most of the patients were observed during the course of their illness, but some were seen only after recovery.

The etiology,[1] epidemiology[2] and method of transmission[3] of the disease are considered in other papers in this series. Identical strains of rickettsias have been isolated from the blood of 2 patients[1] and from two pools of rodent mites, Allodermanyssus sanguineus (Hirst).[3a] The name rickettsialpox has been proposed for the disease,[1] and the name Rickettsia akari for the causative organism.[3a]

The clinical data were obtained by epidemiologists of the New York City Health Department and by a representative from the U. S. Public Health Service, who investigated each case reported to the New York City Health Department from the housing development where the majority of cases occurred and the independent and isolated cases from other boroughs of the city. Diagnoses were based on typical clinical findings, supported in many of the cases by laboratory data, particularly the failure of convalescent serums to agglutinate *Proteus OX 19* and the presence of complement fixation reactions with rickettsialpox antigens.

Twelve patients were hospitalized. We were able to study these 12 cases more thoroughly, with daily observations and more complete laboratory studies.

CLINICAL DESCRIPTION

The disease was characterized by an abrupt onset of chills, fever, sweats and backache, followed after several days by a rash. Prior to the onset of fever by about a week there was an initial lesion, variously described by the patients as a pimple, boil, blind boil or insect bite.

1. *Initial Lesion.*—The initial lesion started as a papule, more or less round, firm to the touch and red. The surrounding skin appeared normal without erythema or induration. The papule grew in size, and the center became vesiculated; the vesicle was, however, deep seated and firm. The fluid in the vesicle was at first clear but occasionally became cloudy (fig. 1). Ultimately it shrank and dried, and a black eschar formed (fig. 2). In its fully developed state the lesion frequently resembled certain stages of vaccinia. At the height of development, which occurred during the febrile period, the papule was round or oval and the diameter at its base varied from about 0.5 cm. to 1.5 cm. The central part of the papule nearly always consisted of firm black eschar. The surrounding skin was erythematous, but there was no induration. The lesion was not tender, nor did it itch. The regional lymph glands were usually enlarged and sometimes were slightly tender to the touch. Lymphangitis was not noted. The initial lesion persisted approximately three weeks and usually left a small scar. Patients occasionally denied the existence of an initial lesion, apparently because they confused it with the rash which followed later. However, a careful inspection of the body usually revealed it. Of 144 cases investigated, in 96, or 67 per cent, of the cases the patients noticed an initial lesion. However, of 86 cases seen by us while the rash was still present, the initial lesion was observed in 82 cases, or 95 per cent. The initial lesions were seen chiefly on the covered parts of the body. However, they were also seen on the neck, face, arms and dorsum of hands (table 1).

2. *Onset of the Disease.*—The onset was sudden and was characterized by chills, fever, sweats, backache and lassitude. It usually occurred about a week after the beginning of the initial lesion. However, since many patients paid little attention to the initial lesion until they became sick, different intervals have been given. The average interval was three to six days. The longest interval reported was seventeen days.

a. Fever: Fever was always present. This was often low grade at onset, but usually it rose rapidly to reach 103 to 104 F. Typically it persisted, with morning

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From the Bureau of Preventable Diseases, New York City Department of Health, acting director (Dr Greenberg); epidemiologist (Dr. Pellitteri); the Willard Parker Hospital, deputy medical superintendent (Dr. Klein), and the U. S Public Health Service, senior assistant surgeon (Dr. Huebner).

From the Bureau of Preventable Diseases, New York City Department of Health, the Willard Parker Hospital, New York, and the Division of Infectious Diseases, National Institute of Health, Bethesda, Md

[1] Huebner, R J.; Stamps, P, and Armstrong, C: Rickettsialpox—a Newly Recognized Rickettsial Disease: I. Isolation of the Etiological Agent, Pub Health Rep **61:** 1605 1614 (Nov 8) 1946

[2] Greenberg, M.; Pellitteri, O, and Jellison, W. L: Rickettsialpox—a Newly Recognized Rickettsial Disease: III. Epidemiology, to be published

[3] (*a*) Huebner, R J., Jellison, W. L, and Pomerantz, C: Rickettsialpox—a Newly Recognized Rickettsial Disease: IV. Isolation of a Rickettsia Apparently Identical with the Causative Agent of Rickettsialpox from Allodermanyssus Sanguineus, a Rodent Mite, Pub Health Rep **61:** 1677-1682 (Nov. 22) 1946 (*b*) Greenberg, Pellitteri and Jellison[2]

remissions for about a week, defervescing gradually to normal. However, fever was variously reported to last from two to ten days.

b. Chills: Chills occurred in 70 per cent of the cases during the first two days, frequently preceding the fever. They were not so severe as in malaria but were sufficient to make the patient uncomfortable. It was not unusual for a patient to have two or more chills a day. Occasionally, patients had chilly sensations rather than frank chills.

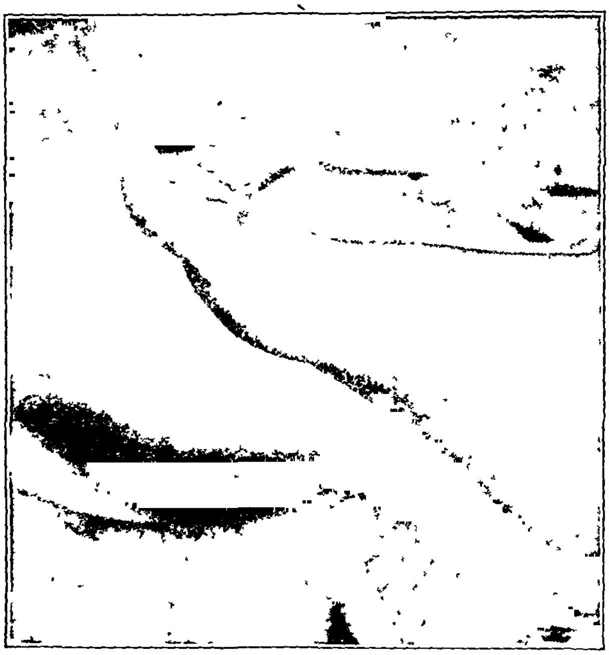

Fig 1.—Initial lesion at the base of the large left toe. The vesicle in the center of the papule is cloudy. Later it will dry and a black eschar will result.

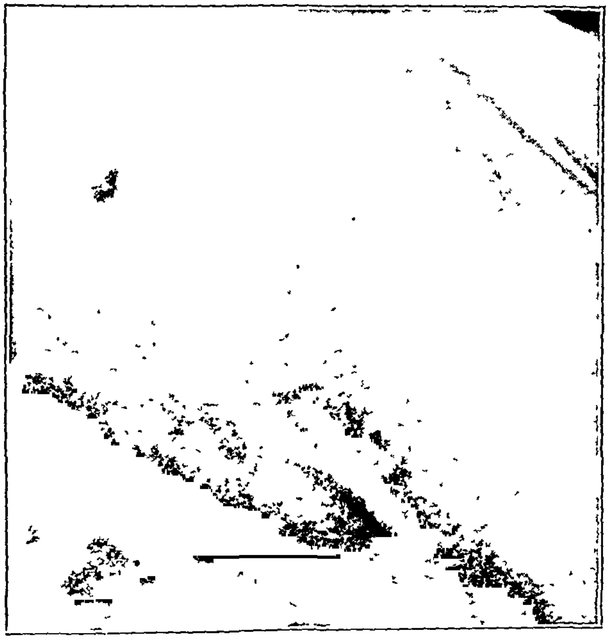

Fig. 2.—Primary lesion on the left arm in crusted stage

c. Sweats: Sweats usually followed the chills; they were drenching in character.

d. Headache: Headache occurred in 90 per cent of the cases. It was often severe. Most frequently it was located in the frontal area, many patients complaining of pain in back of the eyeballs. However, pain in the occiput and at the nape of the neck was a frequent complaint.

e. Muscular Pain: Backache and general soreness of the muscles, as in grip, were common complaints early in the disease.

f. Lassitude: Lassitude was always present and was expressed as a feeling of tiredness and a lack of desire to get out of bed.

g. Photophobia: Photophobia was not an infrequent symptom. Some patients complained of the bright light and wanted to have the shades drawn. Occasionally a mild conjunctivitis was present at the same time. Photophobia was never as severe or as common as it is in measles.

h. Other Symptoms: Occurring rather infrequently were anorexia, dryness of the throat and nausea. Four patients complained of vomiting, 2 of vertigo, 1 of tachycardia and 1 of constipation.

Table 1.—*Site and Incidence of Initial Lesions in Ninety-Six Cases of Rickettsialpox*

Part of Body	No. of Cases	% of Total	Part of Body	No. of Cases	% of Total
Face	8	8 3	Upper extremities	25	26.0
Ear, left 1			Right upper arm 3		
Eyes, outer, right 2			Right wrist 1		
Lips 2			Right elbow 1		
Chin 1			Right finger 1		
Cheek, left side 1			Right axilla 2		
Forehead 1			Left upper arm 7		
Neck	12	12 5	Left forearm 6		
Anterior 9			Left wrist 2		
Nape 3			Left axilla 2		
Shoulders	15	15 6	Lower extremities	16	16 7
Right 7			Right thigh 8		
Left 8			Right ankle 1		
Chest	7	7.3	Right toe 1		
Left side 4			Left thigh 3		
Front 3			Left ankle 2		
Back, at lower part	1	1.0	Left toe 1		
Abdomen	7	7.3	Total	96	99.8
Groin	1	1.0			
Buttock	1	1.0			
Vulva	2	2.1			
Perineum	1	1.0			

Table 2 lists the symptoms by the frequency of occurrence.

3. *Rash.*—A rash appeared in all cases and was noticed most commonly at the onset of fever or one or two days later. In some cases it was not observed until the third or fourth day, and in a few it was not detected until six days later (table 3). The lesions were maculopapular, discrete and erythematous. The papules were usually either flat or curved but occasionally were acuminate. They were firm to the touch. The base was roughly circular, and the area of skin immediately around it was sometimes erythematous. The diameter of the lesions varied from 2 to 8 mm. After a day or two a vesicle developed in the summit of the papule. The vesicle was firm and gave the appearance of a window framed in the top of the papule. When the vesicles dried a black crust was formed, which ultimately fell off without scar formation. In a few patients the papular character of the rash predominated, but in most the vesicular element was most pronounced (fig. 3). The number of lesions in different patients varied. In some the lesions

were scanty, in others moderate in number and in still others they were abundant. There was no pattern in the distribution of the rash. In some patients it was first seen on the arms or legs, in others on the abdomen, back, chest or face. In 2 instances lesions were seen on mucous membranes—once on the palate and once on the tip of the tongue (fig. 4). The rash was not observed on the palms or soles. No subjective symptoms accompanied the rash; there was no itching and no pain. In 73 per cent of the cases the duration of the rash was four to seven days; in the mildest cases the rash did not last more than two or three days, while in some of the more severe cases it lasted as long as ten days (table 3).

4. *Physical Signs.*—Except for the fever and the rash there were no unusual physical signs. The patient did not appear acutely ill in spite of his symptoms; there was no dehydration, and food and drink were taken without coaxing. The patient was alert and cooperative. The pulse rate usually varied with the temperature. The respiratory rate was normal. Heart and lungs were normal on physical and roentgenologic examination. An enlarged spleen was felt in only a few cases, and general lymphadenopathy was also uncommon.

Table 2.—*Frequency of Occurrence of Symptoms in One Hundred and Forty-Four Cases of Rickettsialpox*

Symptoms	Frequency of Occurrence	
	No.	%
Fever	144	100
Lassitude	144	100
Headache	130	90
Sweats	108	75
Chills	101	70
Backache	73	51
Photophobia	57	40
Anorexia	12	8
Nausea	7	5
[illegible]	6	4
[illegible]	4	3
Vertigo	2	1

Table 3.—*Time of Appearance and Duration of Rash in One Hundred and Forty-Four Cases of Rickettsialpox*

Time of Appearance From Reported Onset of Fever	No of Cases	% of Total Cases	Duration of Rash	No of Cases	% of Total Cases
Same day	36	25.0	1 day	2	1.0
1 day	32	22.0	2 days	3	2.0
2 days	36	25.0	3 days	7	5.0
3 days	15	10.0	4 days	24	17.0
4 days	10	7.0	5 days	29	20.0
5 days	1	0.7	6 days	27	19.0
6 days	4	3.0	7 days	24	17.0
8 days	1	0.7	8 days	8	6.0
9 days	2	1.0	9 days	1	..
Not known	7	6.0	10 days	4	3.0
			11 days	1	.
			Not known	14	10.0

5. *Prognosis.*—All patients recovered without complications.

LABORATORY DATA

1. *Blood Counts.*—Red blood cell counts and hemoglobin determinations were normal. White blood cell counts showed a moderate leukopenia in 21 of 22 cases reported on, varying between 2,400 and 7,500 white blood cells per cubic millimeter. The differential smear was frequently normal but occasionally indicated a relative lymphocytosis. The leukopenia usually lasted during the acute illness, returning to normal about two weeks after the onset of fever. In 1 patient a count of 3,200 white blood cells per cubic millimeter persisted for about a month after recovery.

2. *Urinalyses.*—Urinalyses were generally normal except for a transient febrile albuminuria.

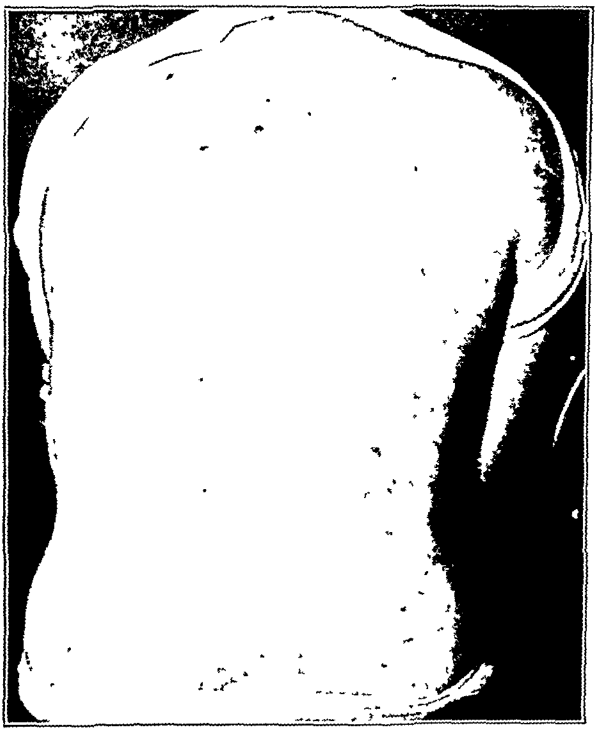

Fig 3 —Rash of rickettsialpox The rash is more pronounced over the lower back and sides

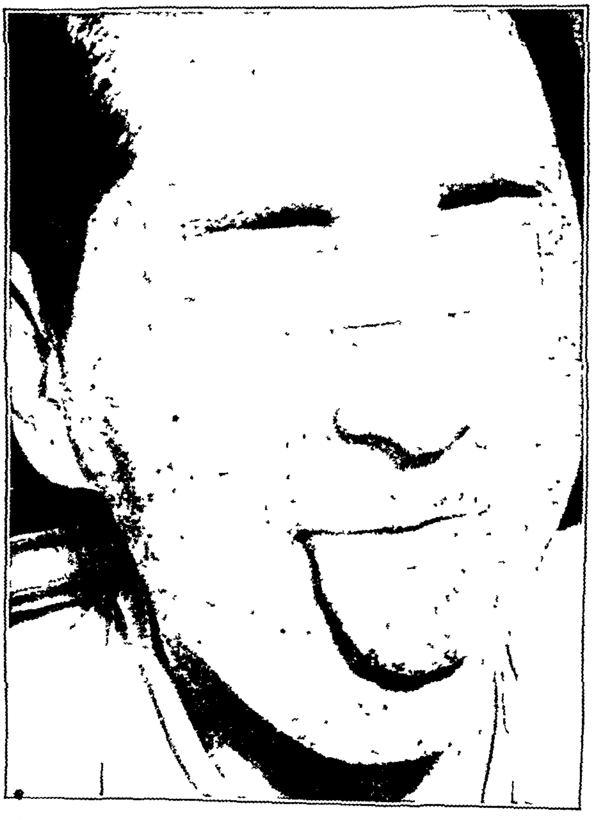

Fig 4 —Vesicular lesions are seen on the tip of the tongue Note also a vesicular lesion on the upper lip and several crusted lesions on the face.

3. *Blood Cultures.*—Early in the disease blood cultures were made in most of the hospitalized patients and in a considerable number of those that remained at home. All were negative.

4. *Sedimentation Rates.*—Tests to determine the sedimentation rates were performed on 7 patients. They were either normal or only slightly elevated.

5. *Serologic Tests.*—Agglutination tests for typhoid bacilli, paratyphoid bacilli A and B, Brucella, Leptospira icterohemorrhagiae, Leptospira canicola and Pasteurella tularensis were done with the serums of 30 samples of bloods obtained from patients both in the acute and convalescent stages. All were essentially negative; agglutination in low dilutions with the O antigen of typhoid was obtained in a few instances. The heterophil antibody test for infectious mononucleosis was likewise negative. Complement fixation tests for psittacosis were done in 5 cases. All were negative. Agglutination tests for Proteus OX 19, OX 2 and OX K were done with the serums of a considerable number of recovered patients. With the exception of a few that agglutinated in low titers all were negative.

PATHOLOGY

Biopsies of a primary lesion, of the lesions due to the rash and of a lymph node were examined at the National Institute of Health and at Willard Parker Hospital. The pathologic picture of lesions of the skin and of a lymph node are considered in the cases reported in this paper. A detailed report on an initial lesion and the later cutaneous lesions will be made in a subsequent note.

DIAGNOSIS

Specimens of blood were obtained from a number of patients in the acute stage of the disease and were inoculated into animals. The recovery of an organism possessing the characteristics of a rickettsia from the tissues of a mouse inoculated with blood drawn from 1 of the patients (M. K.) has been described in the first paper of the series.[1] Antigens prepared from this organism when tested by complement fixation with the serums of normal human subjects and of those who had recovered from endemic typhus, tsutsugamushi fever, Q fever and syphilis all were negative. Tested with serums of patients recovered from Rocky Mountain spotted fever and rickettsialpox, however, the M. K. antigens fixed complement in high titer.

Serums of patients who had recovered from rickettsialpox were tested by complement fixation with the M. K. antigen as well as with the antigen of Rocky Mountain spotted fever. All were positive for the M. K. antigen as were about 80 per cent for the antigen of Rocky Mountain spotted fever, but in lower dilutions. In a few cases in which early and late specimens were obtained from the same patient, significant rises in titer with the M. K. antigen were obtained. Convalescent serums collected between two and three weeks after the onset of fever were usually positive in high dilutions. Some serums obtained as early as a week after the onset of symptoms were positive in low dilutions. Serums were also tested and found negative in the complement fixation test for typhus, Q fever, tsutsugamushi and Colorado tick fever.[4]

DIFFERENTIAL DIAGNOSIS

Chickenpox.—Some of the cases of rickettsialpox seen by us were previously diagnosed as chickenpox or atypical chickenpox, chiefly on account of the vesicular rash. The vesicles are, however, quite different in the two diseases. In chickenpox they are superficial, thin and easily broken, while in rickettsialpox they are deeper and rather firm. Furthermore, the presence of an initial lesion, the occurrence of fever before the onset of rash, the failure to select children for attack and the presence of complement fixing antibodies for rickettsialpox in the serums of convalescent and recovered patients should differentiate rickettsialpox from chickenpox.

Smallpox.—While the pock in the early stage of smallpox resembles that of rickettsialpox, it has a different maturation. It usually becomes pustular and heals to leave a scar. The smallpox rash has a selective distribution, appearing usually on the face, hands and feet. Furthermore, in smallpox there is no initial lesion, and the course of the disease is much severer. There is a prodromal period in smallpox, preceding the onset of fever, when the patient complains of severe headache and backache. Finally, serologic examination of convalescent serums should serve to distinguish the two diseases.

Infectious Mononucleosis.—There should be no difficulty in differentiating this disease from cases of rickettsialpox with lymphadenopathy, since in the former the blood picture is characteristic and the heterophil reaction is usually positive.

Epidemic Typhus.—In epidemic typhus the rash is not discrete and is usually petechial and ecchymotic. No initial lesion is seen. The patients are much sicker, and mortality is high. Nearly all cases give a positive agglutination reaction with Proteus OX 19 and a positive reaction to the complement fixation test with homologous rickettsial antigens.

Endemic Typhus.—In endemic typhus the rash is centripetal in distribution and is either macular or papular but not vesicular. There is no primary lesion. There may be a history of contact with rats. In nearly all cases tests are positive for Proteus OX 19, and the serums give a positive reaction to the complement fixation test with homologous rickettsial antigens.

Rocky Mountain Spotted Fever.—There is a history of tick bite in many of the cases. Rocky Mountain spotted fever is a severer infection, and mortality is high. The lesions are not as discrete and are often ecchymotic, never vesicular. Leukopenia is not characteristic. There is no initial lesion. Most of the cases of Rocky Mountain spotted fever give a positive agglutination reaction for Proteus OX 19 or OX 2. Usually there is a higher titer in a complement fixation test with homologous antigens.

Tsutsugamushi Fever or Scrub Typhus.—The rash in tsutsugamushi fever is macular or maculopapular and not vesicular. The course of the disease is severer and pulmonary signs are common. Serum agglutination with Proteus OX K occurs about the second week in a majority of cases. Specific complement fixation antigens are also available for differentiation.

Boutonneuse Fever.—This disease as described in the literature bears many similarities to rickettsialpox. However, the rash in boutonneuse fever is papular or maculopapular and frequently involves the palms and soles. Serum agglutination of Proteus OX 19 is reported to occur late in the disease or in the convalescent stage. There is a history of association with dogs and of a tick bite.

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[4] We are indebted to Dr. Herald R. Cox of the Lederle Laboratories for performing some of these tests.

REPORT OF CASES

Case 1.—M. K., a white woman aged 20, born in the United States, was a multigraph operator by profession. She noticed a pimple on her left shoulder on July 17, 1946. It did not pain or itch, and she paid little attention to it. On July 22 she suddenly became ill with severe frontal headache. The following morning she went to work but returned home. That evening she felt feverish, had no desire for food and suffered from a severe headache and pain in the back of the neck. On July 24 she had a chill followed by sweating. Her headache continued to be severe and she felt nauseated but did not vomit. She also had an aching in her thighs, calves and back as in grip, but her head was clear. Her eyes became bloodshot and sensitive. Her temperature was 104 F. She noted a rash on the abdomen. Later that day she also noted spots on her right elbow and on her legs and back. The rash appeared in crops for the next two days. The lesions looked like pimples. On July 25 her throat was somewhat sore. She was admitted to the Willard Parker Hospital on July 26 with a temperature of 103.2 F. and a pulse rate of 100. Her skin was warm and flushed, her eyes were bloodshot, and she complained of sensitiveness to light. She was well oriented and not in acute distress. The blood pressure was 122 systolic and 74 diastolic. On the left shoulder there was a flattened red papule about 1.5 cm. in diameter with a central black crust, or eschar. Over the chest, back, arms, legs and face was a discrete, firm, papular, rose-colored rash. The rash did not pain or itch. Many of the papules were capped with a minute vesicle, and some with a tiny scab. In general the lesions were all in the same stage of development. There was no pronounced adenopathy. A small lymph gland was felt in the left occipital region, one in the left posterior cervical area, a few in the right posterior cervical area and one in the right axilla. The spleen was felt 2 fingerbreadths below the costal margin.

Examination of blood taken the next day showed 3.8 million red blood cells with 66 per cent hemoglobin, 5,000 white blood cells, with 43 per cent polymorphonuclears, 50 per cent lymphocytes, 4 per cent mononuclears, 2 per cent eosinophils and 1 per cent basophils. Urinalysis showed no albumin or sugar but an occasional hyaline cast. Nose and throat cultures were positive for Staphylococcus aureus and hemolytic streptococci. The Kline test was negative, as was the heterophil antibody reaction. The blood culture was sterile. The stool culture was negative. The icteric index was 10. The blood cholesterol was 137 mg., the sugar 90 mg., the chlorides 406 mg. and the nonprotein nitrogen 29 mg. per hundred cubic centimeters. The total serum protein was 6.6 Gm., of which albumin was 4 Gm. and globulin 2.6 Gm. per hundred cubic centimeters. The serum was negative in agglutination tests with typhoid bacilli, paratyphoid bacilli A and B, Past. tularensis, Brucella, and Proteus OX 19 antigens. Roentgenologic examination of the lungs and heart and an electrocardiogram were normal. The sedimentation rate was 19 mm. in one hour. The course of the temperature is shown in figure 5. The examination of the blood on July 29 showed 4.0 million red blood cells with 73 per cent hemoglobin, 8,450 white blood cells with 47 per cent polymorphonuclears, 45 per cent lymphocytes, 6 per cent mononuclears, 1 per cent eosinophils and 1 per cent basophils. Urinalysis showed a slight trace of albumin. On July 31 the blood count was 4.1 million red blood cells with 73 per cent hemoglobin, 8,200 white blood cells with 49 per cent polymorphonuclears, 45 per cent lymphocytes, 3 per cent mononuclears and 3 per cent eosinophils. The blood serum on this day agglutinated Proteus OX 19 in a dilution of 1:20 and also agglutinated the O antigen of Eberthella typhosa in the same dilution.

The patient's symptoms had abated by July 29; the spleen was no longer felt, and the rash was gone except for a brownish staining. The lesion on the shoulder was still present but fading. She was discharged on July 31, 1946.

Specimens for biopsy were taken from one of the cutaneous lesions and from a lymph node. The report of the microscopic examination by Dr. Vera Dolgopol of Willard Parker Hospital follows:

> Sections of the skin show a number of small and large mononuclear collections around the blood vessels, particularly near the sebaceous glands. The endothelium of the capillaries is swollen and bulges into the lumen without completely obstructing it. A few strands of fibrin in the lumen of superficial capillaries are seen in one section. The perivascular cellular collections consist of cells with pale nuclei like those of endothelium of lymphangitis and rather numerous mast cells. The latter are also present around the hair shaft and around a few sweat glands and are scattered here and there in the derma. No rickettsia-like structures are seen. A few dilated lymphocytes are filled with protein and show no endothelial swelling.
>
> The lymph node shows a great hyperplasia of the reticulum cells in the cortex. The small blood vessels in the cortex and in the hilus are numerous and are lined with pale, tall cuboidal endothelium. Their lumen is decidedly narrowed. Mast cells are numerous; a few eosinophils are present.

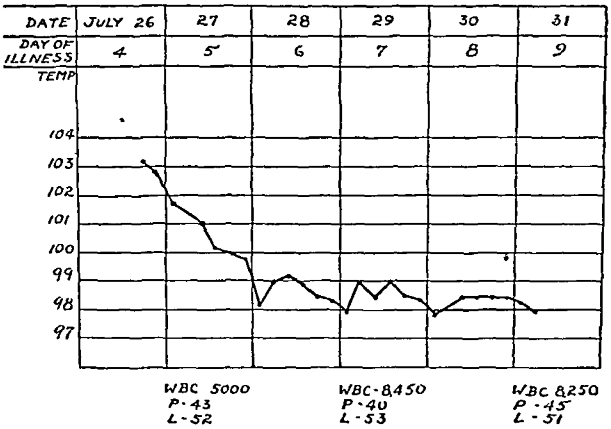

Fig. 5.—Temperature (F.) curve in case 1. WBC, white blood cell count; P, per cent of polymorphonuclears, and L, per cent of lymphocytes.

A specimen of blood taken from M. K. on July 26 was inoculated into laboratory animals. A rickettsial organism was recovered[1] from 1 of 4 mice inoculated. Blood serum obtained on August 29 gave a positive complement fixation result with an antigen prepared from this organism in a dilution of 1:512. The complement fixation test was also positive with Rocky Mountain spotted fever in a dilution of 1:256. Agglutination tests were negative with Proteus OX 19, OX 2 and OX K.

Case 2.—H. B., a white man aged 34, born in the United States, noted a papule on his right shoulder on July 17, 1946. There were no subjective symptoms. On July 24 he stated that he had a "grippy feeling," a severe headache in the occipital region and a tight feeling in the nape of the neck. The next day he took to bed, had a chill, and his temperature rose to 103 F. After the chill he perspired profusely. He complained of headache and backache. The chills recurred, and the temperature fluctuated between 103 and 100 F. He felt grippy and was nauseous but did not vomit. On July 26 a rash appeared on his body. The following day he was admitted to Willard Parker Hospital with a temperature of 102.8 F. and a pulse rate of 100. The lesion on the shoulder, a red papule with central necrosis, was about 1.5 cm. in diameter. On his chest, abdomen, arms and back were a few scattered, red macules and papules, some of the latter surmounted by a vesicle. The cervical lymph nodes were palpable; the axilla and inguinal nodes were slightly enlarged. The spleen was felt just below the costal margin. The blood pressure was 118 systolic and 78 diastolic.

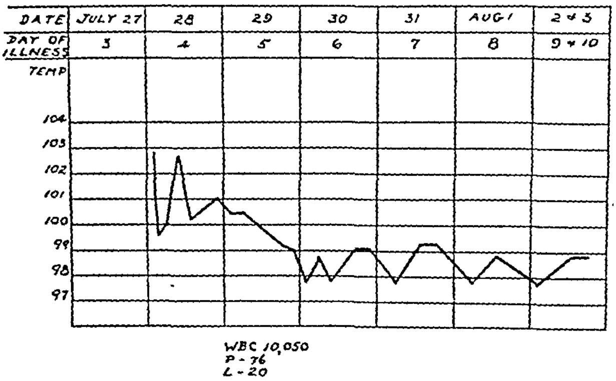

Fig. 6.—Temperature curve in case 2.

Examination of the blood on July 29 showed 10,050 white cells with 76 per cent polymorphonuclears and 20 per cent lymphocytes; there were 4.3 million red blood cells. Urine and stool cultures, the Wassermann test and the heterophil antibody reaction were negative. The icteric index was 16. The blood sugar was 99 mg., the nonprotein nitrogen 20 mg., the cholesterol 197 mg. and the chlorides 421 mg. per hundred cubic centimeters. The serum protein was 5.6 Gm., of which albumin was 4 Gm. and globulin 1.6 Gm. per hundred cubic centimeters. Roentgenologic examination of the lungs and heart was negative. The serum agglutination test was negative for typhoid bacilli, parathyroid bacilli A and B, Brucella, Past. tularensis and Proteus OX 19. A biopsy of a cutaneous lesion was taken. Microscopic examination showed a vasculitis, a frequent observation in rickettsial diseases. No rickettsias were found. The temperature curve is shown in figure 6. By July 30 his temperature had returned to normal and his symptoms were gone, the rash leaving brownish yellow discolorations. The spleen was no longer felt. Blood serum obtained August 18 gave a positive complement fixation test with antigen from the patient M. K. in a dilution of 1:320 and with Rocky Mountain spotted fever antigen in a dilution of 1:80. The serum agglutination test was negative with Proteus OX 19, OX 2 and OX K.

Case 3.—R. R., a white woman, a housewife aged 50 and born in Russia, had lived for the past forty years in the United States. On July 26 she had a chill and noted a temperature of 101 F. She also complained of backache and photophobia. After the chill she had a profuse sweat. Chills and sweats recurred, and her temperature for the next four days ranged between 101 and 102 F. She first noted a rash on her chest on the day of onset of fever; it spread to her face and arms. At no time did she see an initial lesion, but she did note swelling of the right inguinal glands. She was admitted to Willard Parker Hospital on Aug. 30, 1946. She had a temperature of 100.2 F. and her pulse rate was 82. A maculopapular rash with beginning vesiculation, rather sparse in distribution, was seen on the face, chest and arms. A small papular lesion was present on the right side of the hard palate. This later increased in size and became vesicular. No initial lesion was observed on admission. Later, however, a lesion was found on the lower part of the right side of the abdomen, which had the appearance of an initial lesion; it was hidden by the pubic hair.

Examination of the blood showed 4 million red cells, with 70 per cent hemoglobin, and 6,250 white cells, with 71 per cent polymorphonuclears, 23 per cent lymphocytes, 5 per cent mononuclears and 1 per cent basophils. When the white blood cell count was repeated on August 3 it showed 5,700 cells with 63 per cent polymorphonuclears, 26 per cent lymphocytes, 6 per cent mononuclears and 5 per cent eosinophils. On August 5 the white blood cell count was 7,000, with 49 per cent polymorphonuclears, 36 per cent lymphocytes, 12 per cent mononuclears, 2 per cent eosinophils and 1 per cent basophils. The sedimentation rate was 10 mm. in one hour. Roentgenologic examination of the heart and lungs was negative and so was the electrocardiogram. Nose and throat cultures were positive for diphtheroids and Staph. aureus. The vaginal smear was negative. Urinalysis disclosed a slight transient albuminuria. The heterophil reaction was negative. The blood culture and stool culture were negative. The blood sugar determination was 91 mg., the nonprotein nitrogen 32 mg. and the chlorides 297 mg. per hundred cubic centimeters. The icteric index was 12. The total serum protein was 4.1 Gm., of which albumin was 3.28 Gm. and globulin 0.82 Gm. per hundred cubic centimeters. Serum agglutinations with typhoid bacilli, paratyphoid bacilli A and B, Brucella, Proteus OX 19 and Past. tularensis were negative. The patient's fever continued until August 2 (fig. 7) and she was discharged on August 5. Her symptoms had cleared, and the rash had completely disappeared. At no time was the spleen felt.

COMMENT

Two papers describing this disease have been published.[5] Additional cases have been brought to our attention by other physicians in New York, who have reported seeing similar cases over a period of years. The diagnoses at the time were usually atypical chickenpox or fever and rash of unknown origin.

The isolation of rickettsias from the blood of patients[1] and from Allodermanyssus sanguineus (Hirst), ectoparasites of mice[3a] establishes the etiology and strongly indicates the method of transmission of the newly recognized disease. The complement fixation test using antigens prepared from the causative organism provides a serologic aid to diagnosis.

SUMMARY

The clinical features observed in 144 cases of rickettsialpox, a new disease of rickettsial origin, are described. It is characterized by the appearance of an initial lesion about a week before the onset of fever, chills, sweats, headache and backache, and by the appearance of a maculopapular and papulovesicular rash about three to four days after the onset of fever. Except for leukopenia, routine laboratory findings are generally negative. The usual bacterial agglutination tests are uniformly negative; however, antibodies for rickettsialpox are demonstrable by means of the complement fixation test. There have been no deaths.

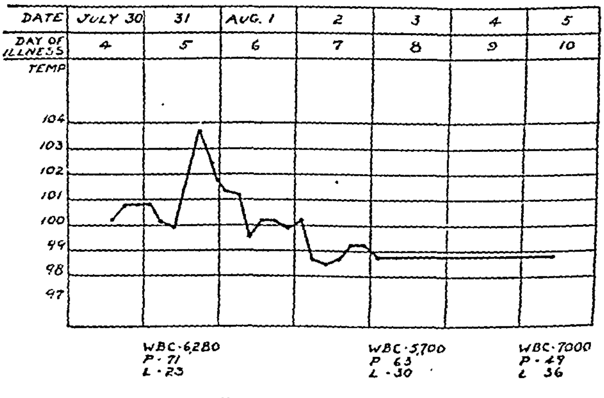

Fig. 7.—Temperature curve in case 3.

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PROPHYLACTIC CHEMOTHERAPY IN APPENDICITIS

Preliminary Report of One Hundred and Eight Cases

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The value of the prophylactic use of the sulfonamide compounds and penicillin in traumatic surgery was conclusively demonstrated during World War II. The mortality rate of battle casualties admitted to the general hospitals in England from the period following the invasion of France to the end of the war was approximately 1 per 1,000. In base hospitals of the same character during World War I the mortality rate varied from 2 per cent to 6 per cent. Part of this sharp reduction in death rate can be attributed to the improved system of evacuation, to the excellent immediate surgical treatment and to the free use of blood and plasma, but most of it was due to the astonishing absence of infection. Every wounded soldier, practically regardless of the size or character of his wound, routinely received penicillin and sulfadiazine prophylactically. There can be little doubt that this preventive therapy was primarily responsible for the relative infrequency of infection of wounds. It is reasonable to suppose that if a similar regimen were followed in every type of major surgical operation in which infection may play a deleterious role, there would be a similar overall reduction in the death rate. Many observers have reported the benefits of such treatment in many varieties of surgical procedures. Many surgeon, however, hesitate to subject all their surgical patients to a rather stereotyped regimen of prophylactic therapy.

The purpose of this paper is to report the results of the routine systemic administration of penicillin and sulfadiazine in a series of patients operated on for acute appendicitis in the Cook County Hospital. The circumstances permit fairly accurate investigation. In a charity hospital there is sufficient mortality from appendicitis on which to draw conclusions. The death rate has been fairly uniform over a period of years. The operations are performed largely by the resident staff. The type of patient, the duration of symptoms, the indications for surgical intervention and the general technic have remained the same for many years. No alteration of any kind was made in the care of appendicitis except the introduction of the routine use of penicillin and sulfadiazine.

Twenty thousand units of penicillin were given intramuscularly with the preoperative medication. This was followed postoperatively by 20,000 units of penicillin every three hours for four days, a total of 660,000 units. The patients also received 1 Gm. of sulfadiazine four times a day for four days postoperatively. If the patient was unable to tolerate oral medication, 5 Gm. of sodium sulfadiazine in 1,000 cc. of isotonic solution of sodium chloride or 5 per cent dextrose solution was given daily by the intravenous route. In children the dosage of penicillin was the same as in adults, but the dosage of sulfadiazine was reduced in proportion to the age of the patient. Clear fluids were allowed soon after the operation unless the patient was vomiting or the abdomen was distended. If the patient was unable to take an adequate amount of fluid orally the fluids were given intravenously to make a total fluid intake of 3,000 cc. a day.

The regimen was followed in 108 consecutive patients who had an appendectomy for acute appendicitis. All cases in which the appendix did not show definite evidence of inflammation or which the pathologist reported as acute catarrhal appendicitis were discarded. The remaining 108 cases were classified as follows: (1) acute suppurative appendicitis, 62 cases; (2) acute gangrenous appendicitis, 17 cases, and (3) perforated appendicitis, 29 cases. There were 77 adults, of whom 55 were men and 22 were women, and 31 children, of whom 22 were boys and 9 were girls. There was only 1 death in the series. This patient was a middle aged obese woman with hypertension, severe diabetes and symptoms of five days' duration. She died twenty-four hours after an appendectomy for a gangrenous appendicitis in a diabetic acidosis that did not respond to insulin treatment.

Table 1 shows the death rate following appendectomy for years 1928 to 1932 as 7.6 per cent; for 1937 and 1938 as 3.9 per cent, and for 1944 and 1945 as 4.3 per cent, as compared with a mortality of approximately 1 per cent in this present series. To compare our series of only 108 cases against the much larger numbers of the previous years subjects the conclusions to some statistical error. The improved financial condition of the community at large has reduced sharply the number of admissions to the hospital, and to obtain a comparable series will take many more years. The difference in mortality is large enough, however, to justify some conclusion. In order to check for a statistical error, we sampled 100 consecutive cases for 1932 and another 100 for 1944 and found the mortality practically the same as that reported for the entire year. To complete the picture it must be stated that during the period in which our series was collected there were 35 patients admitted to the hospital with a diagnosis of acute appendicitis, on whom no surgical operation was performed. Of this group, 4 entered in a moribund condition and died within twenty-four hours. Postmortem examination proved that 2 died of acute appendicitis; the other 2 very likely died of acute appendicitis also. The remaining 31 patients who left the hospital without surgical intervention may or may not have had acute appendicitis.

Table 1.—*Comparative Mortality Following Appendectomy*

Years	No. of Cases	Mortality %
1928-1932	2,857	7.6
1937-1938	2,094	3.9
1944-1945	592	4.3
March 1946-October 1946	108	0.9

In addition to a reduction in mortality there was a concomitant observable reduction in morbidity. It was our opinion that the patients were more comfortable, had less abdominal pain and less abdominal distention and were able to tolerate a full diet at an earlier date. The abdomen was usually soft and relatively nontender.

Usually the temperature did not rise after the second postoperative day. In 75 per cent of the cases of acute suppurative and acute gangrenous appendicitis without perforation, the temperature was normal by the end of the third postoperative day. In 50 per cent of the cases of perforated appendicitis the temperature was

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normal by the sixth postoperative day. Nine children ran a low grade fever fluctuating from 101.8 F. to normal for ten days. Four of these patients had drains inserted to or into the peritoneal cavity at the time of surgical intervention.

In the past the majority of patients with perforated appendicitis had considerable postoperative ileus with abdominal distention. Only 1 patient in this series had a paralytic ileus severe enough to warrant the use of Wangensteen suction. In 1 patient the appendicitis was erroneously diagnosed as an empyema of the gallbladder. A large enema given preoperatively perforated the appendix and passed into the free peritoneal cavity. Approximately 1,000 cc. of the soapsuds enema was recovered from the abdomen. The patient made an uneventful recovery without abscess formation.

Three cases of intra-abdominal abscess and 1 case of pelvic abscess were observed in this series. These abscesses subsided spontaneously on the continuation of the routine administration of penicillin and sulfadiazine. The masses became less tender, smaller and then disappeared, the temperature gradually dropped to normal, and the patients were discharged by the twenty-first postoperative day. There were 9 instances of wound infection. In 5 of these, drains were inserted at the time of the surgical operation. The use of penicillin and sulfadiazine seemed to prevent the development of severe infection in the wounds. In the infected wounds there was also an apparent absence of local tissue reaction, as evidenced by a minimal amount of pain, tenderness, heat and swelling of the surrounding tissues.

TABLE 2.—*Average Postoperative Hospital Stay in Days*

Pathologic Data	1935	1944	1946
Suppurative appendicitis	12.1	11.0	7.9
Gangrenous appendicitis	17.5	12.0	8.0
Perforated appendicitis	19.6	19.7	11.7

Table 2 shows the average hospital stay in days for 100 consecutive patients with appendectomies in 1935 and in 1944 as compared with that for 108 treated by the prophylactic use of penicillin and sulfadiazine. There was a definite reduction in the duration of hospitalization. Since no organized effort was made to send the patients home at an early date this indicates in general a shorter and less complicated convalescence.

COMMENT

Although there can be little doubt that prophylactic chemotherapy reduces the mortality in appendicitis, it is difficult to state what type of chemotherapy is most effective.

Bower[1] and his associates made the first attempt to reproduce the mixed type of peritoneal infection seen in appendical peritonitis. They found a substantial reduction in the mortality of experimental animals after the administration of the azosulfamide "prontosil."

More recently Fauley[2] and others have shown that penicillin is effective in controlling the peritonitis induced in dogs by ligation of the appendix and its blood supply. The mortality in untreated controls was 92.6 per cent, with an average survival time of fifty-seven hours. There was no mortality in those dogs that were treated from the time of surgical intervention. When penicillin therapy was delayed twelve hours the mortality was 21 per cent.

Murphy[3] and his associates have reported an evaluation of streptomycin therapy in experimental peritonitis produced by the technic that was introduced by Bower[1] and modified by Fauley[2] and his co-workers. They have established that subsequent to intramuscular injection streptomycin is present in significant amounts in the peritoneal fluid of normal dogs as well as dogs with acute diffuse peritonitis. The mortality in untreated controls was 70 per cent. Of 10 animals that were treated with streptomycin, 4 died in forty-nine hours, a mortality of 40 per cent.

There is a large volume of clinical evidence indicative of the effectiveness of chemotherapy in the control of peritonitis. A comparative study of the use of the sulfonamide drugs reported by Ravdin, Rhoads and Lockwood[4] reveals a distinct lowering of the morbidity and mortality of appendicitis. Stafford[5] has used sulfathiazole in a dosage necessary to maintain a blood level of 6 to 8 mg. in 105 cases of peritonitis and abscess of appendical origin, with a lowering of the mortality from 10 to 4.76 per cent. Many investigators have reported similar experiences with the use of sulfanilamide and its derivatives.[6]

The value of the prophylactic use of penicillin in traumatic injuries of the abdomen was conclusively demonstrated in World War II. Imes[7] has reported a distinct lowering of the mortality in peritonitis with no instance of a diffuse suppurative process during the Italian campaign. Crile,[8] Palmer[9] and Wollgast[10] have concluded that penicillin in massive doses has a definite effect in the control of peritonitis due to appendicitis or perforation of the large bowel. Crile[11] has stated that large doses of penicillin are necessary to control the peritonitis secondary to appendicitis and has reported no mortality in 50 patients so treated. We believe that it is not necessary to have a dosage greater than 20,000 units of penicillin intramuscularly every three hours solely for prophylactic purposes. Sulfonamide therapy was used in conjunction with penicillin in order to obtain as wide a range of bacteriostatic effect as possible.

It is not our contention that the indicated regimen is the most advisable one; we are of the opinion that routine prophylactic chemotherapy of this type is definitely beneficial and that a similar regimen would be equally effective subsequent to any laparotomy in which contamination or infection plays a role in mortality or morbidity.

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SUMMARY

Penicillin and sulfadiazine were routinely administered to 108 patients operated on for acute appendicitis. No alteration of any kind was made in the care of appendicitis except the introduction of prophylactic chemotherapy.

In addition to a definite reduction in mortality, there was a concomitant reduction in morbidity. The patients were more comfortable, had less abdominal pain and less abdominal distention and left the hospital at an earlier date.

CHRONIC SUBCLINICAL IMPAIRMENT OF THE LIVER

Early Diagnosis and Treatment

Further Improvement and Evaluation of Certain Liver Function Tests

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Up to the present time the diagnosis and treatment of chronic impairment of the liver in its early subclinical stages have not been practiced to any degree by the members of the medical profession. The main purpose of this communication is to outline a reliable and simple method for such early diagnosis, evaluation and treatment of chronic impairment of the liver in a stage prior to the appearance of clinical evidence. The fact that a relatively effective method is available for the treatment of acute or chronic impairment of the liver makes it especially important to detect and evaluate chronic hepatic impairment in its early stages, when intensive treatment may prevent the development of advanced chronic hepatitis and cirrhosis. Also, the recent development of much more sensitive tests now makes it possible in all probability to prevent the indefinite persistence in most cases of residual chronic hepatitis following acute hepatitis. These tests allow detection and follow-up observations of such residual hepatitis and thus insure the continuation of intensive treatment for a period of months, if necessary, or until the more sensitive tests have become negative. The earlier detection and treatment of acute hepatitis now are also feasible if the possibility of this condition is considered in the preicteric stage of malaise and anorexia and if the more sensitive tests are conducted at this time.

Until recent years the criticism has been leveled against liver function tests that they were so lacking in sensitivity that clinical evidence of hepatic disease usually was present before the tests became positive. During recent years, with the further development of liver function tests, some of which are three times as sensitive as the former Rosenthal sulfobromophthalein sodium (bromsulphalein) test, a contrary criticism directed toward some of the newer tests has been that they are too sensitive and may indicate only impairment of hepatic function without impairment of structure. In this article we outline a method of interpreting the positive results of these more sensitive tests and of demonstrating probable evidence as to whether or not morphologic impairment of the liver exists in such cases.

In the selection and employment of the more sensitive liver function tests, the all important point is that they should be reliable and not yield false positive results on normal persons. To insure this, the essential consideration is that correct normal standards should have been determined for the technic of these tests. We have been particularly interested in checking the normal standards for the more important tests and in advocating a change in standard whenever it was clearly indicated, as, for example, in the case of the sulfobromophthalein test and the thymol turbidity test. In four recent publications [1] we have summarized the results of these studies on normal standards, as well as of detailed studies on the relative sensitivity of the newer tests. The advantages and limitations of each of these tests have also been noted, as well as the incidence of various positive tests in different types of hepatic disease.

The newer tests which we have studied and evaluated in detail have been the forty-five minute 5 mg. per kilogram photoelectric sulfobromophthalein test as recently developed in this clinic,[2] Hanger's cephalin-cholesterol flocculation test [3] as modified by Neefe and Reinhold,[4] the oral hippuric acid test of Quick [5] as modified by Boyce and McFetridge,[6] the intravenous hippuric acid test of Quick,[7] the thymol turbidity test of Maclagan [8] and the associated thymol flocculation test recently suggested by Neefe.[9]

Six additional liver function tests employed to advantage in this clinic are (*a*) the blood prothrombin determination after vitamin K administration as advocated by Ivy,[10] (*b*) the serum albumin and globulin determinations as evaluated by Tumen and Bockus,[11]

Read before the American College of Physicians, Chicago, Nov. 16, 1946.

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We are indebted to Hugh A. Miller, M.D., Charles H. Brown, M.D., and Robert D. Albee, M.D., for valuable aid in the collection of data.

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10. Ivy, A. C., and Roth, J. A.: Why Do a Liver Function Test? Gastroenterology **1**: 655-668 (July) 1943.

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(*c*) the new simplified quantitative urinary urobilinogen test of Watson and his associates,[12] (*d*) the oral galactose tolerance test as evaluated by White [13] and Shay and Fieman,[14] (*e*) the quantitative serum bilirubin determinations developed by Bernheim [15] and van den Bergh [16] and (*f*) occasionally the total blood cholesterol and ester determinations evaluated by White, Deutsch and Maddock.[17]

In order to obtain the maximum amount of valuable information from the employment of liver function tests we have thought it worth while to provide also an outline of the particular subgroups of tests which are best adapted to the study of different types of hepatic problems.

The all-important evidence is outlined for the validity of the diagnosis of chronic subclinical impairment of the liver.

TESTS OF DIFFERENT SENSITIVITY IN SUBCLINICAL IMPAIRMENT OF THE LIVER

The old teaching that the results of liver function tests should be interpreted in conjunction with the clinical observations is still correct, if clinical evidence is present. However, hepatic impairment should be diagnosed and treated before clinical evidence becomes apparent, and it is with the early diagnosis and therapy of the disease that this communication is concerned.

TABLE 1.—*Therapeutic Response in Ninety-One Cases of Subclinical Impairment of the Liver*

(Results of Sensitive Tests Before and After Treatment *)

Tests	Before Treatment		After Treatment: Percentage of Cases with Positive Tests Which Have Now Become Negative †
	No of Cases	Positive Tests	
Cephalin cholesterol ..	91	66	67% of 66
Sulfobromophthalein .	91	33 ‡	70% of 33
Thymol turbidity	91	24 §	58% of 24

* The average period of treatment was four and one half months. Variation in the period of treatment was two weeks to fifteen months

† Only in occasional cases in this treated group did the tests become more positive in spite of treatment

‡ The apparent lesser sensitivity of the sulfobromophthalein test noted *here is due to the fact that in the great majority of cases the cephalin* and thymol tests were used as the screening tests for selection of these patients for treatment. The sulfobromophthalein test was then conducted on those patients who had yielded a positive cephalin or thymol test

§ The great majority of these thymol turbidity tests were performed with the less sensitive p_H of 7 8, which has been employed until recently.

Although different liver function tests do test different functions, and a "less sensitive" test may be positive in a particular case in which a "more sensitive" test is negative, nevertheless, in a group of 100 cases one test will consistently yield a larger proportion of positive reactions than another and is, therefore, relatively more sensitive. The determination of relative sensitivity will be discussed later in more detail.

In the initial attempt to determine the degree of impairment of the liver after positive results have been obtained with the more sensitive screening tests (such as the cephalin test, the thymol tests with a p_H of 7.55 or the previously mentioned type of sulfobromophthalein test), the second indicated step is to conduct certain of the less sensitive tests, for example, the oral hippuric acid test. If these less sensitive tests are definitely positive, one is obviously dealing with at least a moderate degree of morphologic impairment of the liver. If these latter tests are negative, one is obviously dealing with early impairment of the liver, either impairment of function alone or definite early organic impairment This latter differentiation must be made by a third method of approach, a therapeutic test.

THE VALUE OF A THERAPEUTIC TEST

In those cases without clinical evidence of hepatic disease in which only the more sensitive liver function tests are positive, do such positive findings indicate impaired hepatic structure or only impaired hepatic function?

In an attempt to answer this question, 91 subclinical cases with this type of positive data have been subjected to a therapeutic test with intensive liver therapy. The value of such a therapeutic test was emphasized in our recent publication.[1c] The time required for reactions to the more sensitive tests to return to normal values in these cases has varied all the way from seven days to fifteen months, and some of the tests are still positive. This wide variation of response constitutes most valuable information, since it measures the magnitude of the therapeutic problem in each particular case; and the therapeutic test insures the initiation of early and effective treatment. As to the value of this varied therapeutic response in the interpretation of these positive tests, it is reasonable to believe that there is probably only an impairment of hepatic function in those patients whose reactions to tests return to normal after a relatively short period of treatment, e. g., a week or ten days. On the other hand, in those cases in which months of intensive treatment are required before responses to these sensitive tests finally return to normal, one is practically forced to believe that there must have been impairment of hepatic structure as well as of hepatic function, even though no demonstrable clinical evidence of disease of the liver had yet developed. In the intermediate group of therapeutic time responses, we do not yet know just where to draw the line of demarcation between functional and organic impairment. Only time and further study, preferably with correlation of hepatic biopsy findings (as they become available) with the results of various tests and with the time factor in therapeutic response, will refine further the interpretation of the more sensitive tests in this intermediate group of subclinical cases. Meanwhile, an important advance will be made if there becomes prevalent with medical practitioners the practice of routinely instituting an intensive therapeutic test in this whole group of subclinical cases which yield positive results with the more sensitive tests but *in which clinical evidence of* disease of the liver has not yet developed.

The detailed results of the therapeutic response of these 91 subclinical cases are outlined in tables 1 and 2 (see footnotes of table 1).

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15. Bernheim, A R : The Icterus Index (A Quantitative Estimation of Bilirubinemia), J A. M A. **82:** 291-295 (Jan 26) 1924.

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17. White, F. W.; Deutsch, E , and Maddock, S.· The Comparative Value of Serial Hippuric Acid Excretion, Total Cholesterol, Cholesterol Ester, and Phospholipid Tests in Diseases of the Liver, Am J. Digest. Dis. **6:** 603-610 (Nov.) 1939.

VALIDITY OF DIAGNOSIS OF CHRONIC SUBCLINICAL IMPAIRMENT OF THE LIVER

That the foregoing group of cases in tables 1 and 2 do represent true instances of subclinical hepatic impairment (of structure in most cases and of function alone in others) seems evident because:

1. We have now had sufficient experience with the sulfobromophthalein, cephalin and thymol tests in following the clinical progress of patients with well defined and known disease of the liver to note the consistent and persistent correlation of the varying results of the tests with the progress of the disease.

2. When these more sensitive tests have been performed in the presence of a vast variety of diseases other than primary disease of the liver they tend to be negative, except for a few well known exceptions with the cephalin test or for positive reactions to liver function tests in patients having acute infections or other diseases which have a known tendency to produce secondary impairment of hepatic function.

3. The positive results obtained with these more sensitive tests tend to return to normal in response to specific and intensive liver therapy.

In establishing this subclinical group of cases the absolute necessity of using correct normal standards for the tests is obvious.

FURTHER STUDIES ON NORMAL STANDARDS OF LIVER FUNCTION TESTS

Using 40 normal young adults (25 to 35 years of age), earlier normal control studies[1] have been conducted previously on the 2 mg. per kilogram twenty minute sulfobromophthalein sodium method, the 5 mg. per kilogram forty-five minute comparator block and photoelectric sulfobromophthalein methods, Hanger's cephalin-cholesterol flocculation test (with Neefe's modification), the intravenous hippuric acid test and the thymol turbidity test. Either the normal standards suggested by the authors of these tests have been confirmed or an alteration has been suggested and the reasons outlined. In determining correct normal standards one should emphasize first the reliability of the test, with avoidance of false positive results; sensitivity should be considered second.

More recently, since Neefe[9] reported his development and evaluation of the thymol flocculation test as a simple supplement to the thymol turbidity test we have been interested in its use and appraisal. Our studies on 40 normal serums confirm his statement that with normal serums flocculation either does not occur or is not more than 1 plus. Since 95 per cent of our normal serums yielded no flocculation in eighteen hours with the more sensitive thymol buffer solution of p_H 7.55 referred to later on and only 5 per cent yielded 1 plus flocculation, any eighteen hour reading of 2 plus, 3 plus or 4 plus flocculation indicates some impairment of hepatic function.

As noted in our previous studies, when using Neefe's modification[4] of Hanger's cephalin-cholesterol flocculation test,[3] any result of 2, 3 or 4 plus flocculation indicates some impairment of the liver's function. (The hypersensitivity and false positive results with the cephalin test are avoided now by keeping the test solutions in a dark place.)

In view of the known effect of light in producing false positive results with the cephalin test, the effect of light on the thymol turbidity and flocculation tests was investigated recently, using the same 40 normal young adults. In these normal control studies with the two thymol tests, false positive results were not obtained when the test solutions were allowed to stand exposed to daylight during the test period. In the case of patients with impairment of the liver, the positive results obtained with the thymol turbidity test exhibited the same degree of positiveness whether the test solution was exposed to light or was kept in the dark. With the thymol flocculation test there were only occasional cases in which the positiveness of the result was slightly increased from 2 to 3 plus or from 3 to 4 plus when the test solution was exposed to light for the longer eighteen hour period.

Normal control studies were recently conducted also on the serums of the same 40 young adults, using the cephalin test, the thymol turbidity and thymol flocculation tests and collecting about half of the blood specimens one to two hours after breakfast and the other half one to two hours after lunch. False positive findings did not result from the ingestion of food before the withdrawal of the blood. In other words, it is apparently not necessary to obtain the blood in the morning when the patient is fasting, although most of our studies have been conducted on "fasting" blood.

TABLE 2—*Illustrative Cases*

Variable Time Required for More Sensitive Tests to Return to Normal with Intensive Liver Therapy (Ninety One Subclinical Cases)

Case	Positive Tests Before Therapy			Period of Therapy Required for Tests to Become Negative			Tests Still Positive (Time Interval)		
1	Cephalin cholesterol 4+			0		7 days			
2	Cephalin cholesteral 2+			0		3 wks			
3	Cephalin-cholesterol 3+			0		5 wks			
4	Cephalin cholesterol 4+			....			4+		28 wks.
5	Cephalin cholesteral 3+			0		27 wks			
6	Cephalin cholesterol 2+			1+		32 wks			
7	Cephalin cholesteral 2+			....			3+		63 wks.
8	Thymol turbidity 3 U.			2 U.		2 wks.			
9	Thymol turbidity 3 U.			1 U.		6 wks			
10	Thymol turbidity 4 U.			2 U.		6 wks.			
11	Thymol turbidity 4 U.			2 U.		10 wks			
12	Thymol turbidity 5 U.			....			3 U.		12 wks.
13	Thymol turbidity 3 U.			0 U.		26 wks			
14	Thymol turbidity 6 U			....			4 U		22 wks
		45 Min.	60 Min	45 Min.	60 Min		45 Min.	60 Min	
15	Sulfobromophthalein	5%	1%	0	0	4 wks.			
16	Sulfobromophthalein	5%	4%	0	0	5 wks.			
17	Sulfobromophthalein	6%	5%	0	0	6 wks.			
18	Sulfobromophthalein	7%	4%	0	0	14 wks.			
19	Sulfobromophthalein	10%	6%	3%	2%	24 wks.			
20	Sulfobromophthalein	7%	4%	. ...			5%	2%	6 wks.

The determination of the correct normal standard for Watson's simplified quantitative urinary urobilinogen test will be discussed later.

FIGURES INDICATIVE OF IMPAIRMENT OF HEPATIC FUNCTION

With the use of correct normal standards, in the case of the eleven liver function tests used in this clinic, the evidence of impairment of the liver's function is outlined in detail in table 3.

SENSITIVITY AND VALUE OF THE THYMOL TURBIDITY AND THYMOL FLOCCULATION TESTS

Our published evaluation of the thymol turbidity test[1c] in cases of gross hepatic disease agrees fairly well with that of Watson and Rappaport[18] and Neefe,[9] in that this test is particularly valuable in cases of acute infectious hepatitis, both in evaluating the degree of hepatitis and in following its course. In cases of hepatic cirrhosis our published statistical studies agree with Watson's experience that the thymol turbidity test is *not positive as frequently as is the cephalin test.*

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[18] Watson, C. J., and Rappaport, E M.: A Comparison of the Results Obtained with the Hanger *Cephalin Cholesterol Flocculation* Test and the Maclagan Thymol Turbidity Test in Patients with Liver Disease, J. Lab. & Clin Med 30: 983 (Dec.) 1945.

In the recently published results of our study [1c] which compared the sensitivity of the thymol turbidity test with that of the cephalin and sulfobromophthalein tests, the p_H of the thymol buffer solution employed was 7.8, as suggested by Maclagan.[8] With that hydrogen ion concentration it was noted that the thymol turbidity test lacked adequate sensitivity to be of value as a screening test in early chronic cases of impairment of the liver and, also, that it was positive in only 44 per cent of our cases of well developed hepatic cirrhosis. In cases of acute hepatitis with more extensive damage to the liver the thymol buffer solution with a p_H of 7.8 was fairly satisfactory.

More recently we have been using a slightly lower p_H of 7.55 for the thymol turbidity and flocculation tests. The thymol method with this lower hydrogen ion concentration is much more sensitive in detecting impairment of the liver in chronic cases, as we have reported elsewhere,[19] and it is a satisfactory screening test for use in association with the cephalin test. The statistics quoted later (comparing the sensitivity of the thymol tests with that of the cephalin test) were obtained with this lower and more sensitive p_H of 7.55. And yet this p_H of 7.55 is not too sensitive, for no false positive thymol turbidity tests were obtained when the 40 normal serums were tested with the p_H 7.55 thymol buffer solution, and the same normal standard of 0 to 2 units previously determined for the thymol turbidity test with p_H 7.8 was used. In fact 86 per cent of the 40 normal serums yielded results of only 1 unit with p_H 7.55, and no results of more than 2 units were obtained. Also, when the thymol flocculation test was conducted with a p_H of 7.55 on the 40 normal serums (using the normal standards noted previously) no false positive results were obtained. Only an occasional 1 plus flocculation result was obtained (as with the p_H of 7.8), and no 2, 3 or 4 plus results were observed.

TABLE 3.—*Figures Indicating Impairment of Liver Function*

(Using Correct Normal Standards)

1. *A.* 5 mg. per Kg. 45 min. photoelectric sulfobromophthalein method: any 45 min. reading of more than 4% of retained dye
   B. 5 mg. per Kg. 45 min. comparator block sulfobromophthalein method: any 45 min. reading showing any retained dye
2. Cephalin-cholesterol flocculation test: ++, +++ or ++++ results
3. *A.* Thymol turbidity test (p_H of 7.55 or 7.8): 3 U. or more
   B. Thymol flocculation test (p_H of 7.55 or 7.8): ++, +++ or ++++ results
4. Intravenous hippuric acid test: less than 0.70 Gm.
5. Oral hippuric acid test: less than 3.0 Gm.
6. Blood prothrombin after vitamin K: less than 70% of normal
7. Serum albumin: less than 4.0 Gm. per 100 cc.
8. Simplified quantitative urinary urobilinogen test: more than 1.0 U.
Serum bilirubin (*a*) icteric index; reading above 7; (*b*) quantitative indirect van den Bergh: more than 0.8 mg. per 100 cc.
Galactose tolerance test (oral): more than 3.0 Gm.
Total blood cholesterol: more than 220 mg. per 100 cc.; cholesterol esters: less than 60% of total cholesterol

Not only is the thymol method with the more sensitive p_H of 7.55 much more helpful in studying cases of chronic disease than is the p_H of 7.8, but it seems as satisfactory as the p_H of 7.8 in following the progress of cases of acute impairment. In fact, it should prove to be even more helpful than the less sensitive p_H of 7.8 in demonstrating the last trace of residual hepatitis *in the late convalescent stages of acute hepatitis.* A test which never gives false positive results with normal serums cannot be said to be too sensitive. The p_H should not be any lower than 7.55, however, because (1) this is not necessary for adequate sensitivity and (2) a lower hydrogen ion concentration would introduce a risk of false positive results.

As pointed out by Maclagan, the Kingsbury turbidity standard should be checked against diluted serum of known protein content every few months to be sure it is still correct. Even though Maclagan's technic of preparation is consistently followed each time, the hydrogen ion concentration of each freshly prepared thymol buffer solution should be accurately determined and adjusted, since it may vary with different lots of sodium barbital obtained from the same firm.

Our recent experience with the thymol flocculation test indicates that it has definite supplementary value (1) in confirming the positiveness of certain borderline reactions to thymol turbidity tests and (2) in adding to the total sensitivity of the thymol method. Although the cephalin test is still the best screening test for early chronic impairment of the liver, it will be noted from an evaluation of table 4 that the combined thymol turbidity and flocculation tests have an exceedingly important supplementary value as screening tests if the more sensitive p_H of 7.55 is employed. As noted in our recent publication,[1c] the thymol test is not a good screening test if the less sensitive p_H of 7.8 suggested by Maclagan is employed.

EVIDENCE THAT A DIFFERENT CHEMICAL MECHANISM UNDERLIES THE CEPHALIN TEST THAN THAT UNDERLYING THE THYMOL TESTS

Watson and Rappaport [18] reported evidence that there must be a different chemical mechanism for the cephalin test than for the thymol turbidity test, because there was a lack of parallelism in the degree of positiveness of the two tests in identical cases in which both tests were positive. (Watson's cases were well developed examples of hepatic disease, as has been noted previously.) In our recent study of 58 early subclinical cases of disease of the liver (using the thymol method with a p_H of 7.55) the fact that 78 per cent of this group of cases yielded a complete dissociation of positive results with the cephalin and thymol tests points definitely to a different chemical mechanism for these two tests. Neefe [9] has noted recently in a small but important group of cases a dissociation of positive results with the cephalin and thymol tests in the late, posticteric or convalescent stages of acute infectious hepatitis, with concomitant interesting findings in the microscopic pathologic study of the liver in these cases. Hanger and his associates [20] have noted in chemical studies evidence that when the cephalin test is positive there is an alteration from normal in the inhibiting effect of the albumin fraction on the globulin flocculation with the cephalin-cholesterol reagent. The exact underlying chemical basis for the thymol turbidity and flocculation tests is not known definitely and should be studied. It probably involves an alteration in the gamma globulin. That there is a different chemical basis for the two tests seems obvious.

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[19] *Proceedings of the Fifth Liver Injury Conference, September 1946,* New York, Josiah Macy Jr. Foundation, to be published. Mateer, Baltz, Comanduras, Steele and Brouwer.[1c]

[20] Moore, D. B.; Pierson, P. S.; Hanger, F. M., and Moore, D. H.: Mechanisms of Positive Cephalin-Cholesterol Flocculation Reaction in Hepatitis, J. Clin. Investigation **24:** 292-295 (May) 1945.

ADVANTAGES OF THE PHOTOELECTRIC SULFOBROMOPHTHALEIN SODIUM (BROMSULPHALEIN) METHOD

I. The advantages of the photoelectric sulfobromophthalein method over the comparator block method are as follows: 1. As pointed out by Gaebler,[2a] the sulfobromophthalein determinations can be made accurately on turbid, hemolyzed or icteric serums. 2. They can be made on as little as 0.5 cc. of serum. 3. Exceedingly small amounts of residual dye can be detected in the serum and accurately measured. 4. Although with 10 per cent or more of retained dye the results obtained by the two methods are comparable, the photoelectric readings are more accurate with any amount of dye.

II. As we have noted in earlier studies,[1c] the photoelectric sulfobromophthalein method in jaundiced patients does measure accurately the amount of dye retained in the serum. Furthermore, it seems to be a reliable index of the degree of impairment of function of the liver in cases of hepatic jaundice, as evidenced by a comparison of these results with those of other tests in a group of jaundiced and nonjaundiced patients. The question has been raised as to whether the sulfobromophthalein test parallels the serum bilirubin test in results obtained in the hepatic type of jaundice. In some cases it does, but in others there is a definite and pronounced dissociation of results. In cases of subclinical hepatic jaundice the photoelectric sulfobromophthalein sodium test seems to be of particular value. Thus far we have noted no evidence of any untoward effect on the damaged liver caused by the injection of the dye. Since this is an excretory test, in obstructive jaundice the retention of dye in the blood stream is due mainly to the obstruction, and it is not a reliable index, therefore, of impaired function of the liver. The test should not be used in cases of obstruction of the biliary duct.

SIMPLIFIED QUANTITATIVE URINARY UROBILINOGEN TEST

Watson's simplified quantitative urinary urobolinogen test of liver function published recently[12] is a test which was not discussed in our previous publications and which merits special comment. It is a simplification of the previous, more elaborate petroleum ether extraction method of Watson and his associates.[21] In the simplified method[12] the results are expressed in terms of Ehrlich units per hundred cubic centimeters of urine instead of in terms of milligrams per hundred cubic centimeters. This test presents the following special advantages: (1) it yields direct and extremely valuable evidence in the differential diagnosis of hepatic and obstructive jaundice, and (2) serial tests are helpful in following the course of acute hepatitis under treatment.

Using Watson's published technic for his simplified urobilinogen test,[12] our laboratory previously conducted the test on 40 normal young adults. With the 2 to 4 p. m. collection of urine, the lowest reading was 0.39 Ehrlich unit and the highest normal result was 2.24 units per hundred cubic centimeters of urine, with every range of variation between these extremes. Any reading of 2.3 units or more per hundred cubic centimeters was regarded, therefore, as indicating impairment of hepatic function. This conclusion corresponded closely with Neefe's normal studies[9] on Watson's test and with Neefe's conclusion that any result of more than 2.5 units per hundred cubic centimeters indicates impairment of the function of the liver. Watson's normal studies, however, showed an upper limit of normal of only 1.0 unit, with rare exceptions of minor degree.

The explanation of this disagreement of results obtained in tests on normal persons has been ascertained. Dr. Watson's laboratory, we have learned recently, adds the acetate immediately after adding the diazo reagent in conducting the test, thus preventing the development of a deeper color, which evidently results only if an interval elapses before adding the acetate. The importance of observing this precaution is emphasized in two current publications by Kelly, Lewis and Davidson[22] and by Watson and Hawkinson.[23]

TABLE 4—*Sensitivity and Value of Thymol Turbidity and Flocculation Tests as Screening Tests if a More Sensitive New p_H of 7.55 Is Employed*

(Comparison with Cephalin Test)

1. In screening over 300 persons 58 subclinical cases of liver impairment were found, yielding positive results with one or more of tests listed previously
   A 33 of 58 subclinical cases presented a positive cephalin test
   B. 18 of 58 cases presented a positive thymol turbidity test
   C 15 of 58 cases presented a positive thymol flocculation test
   D 25 of 58 cases presented either positive thymol turbidity or flocculation tests, or both
   E Therefore, combined thymol tests with p_H 7.55 yielded 76% as many positive tests as did the cephalin test in screening subclinical cases

2 *A.* In 13 of 58 cases both cephalin and thymol tests were positive, viz., one or the other, or both thymol tests
   B. In the other 45 cases either the cephalin test or thymol tests alone were positive (in other words, there was a complete dissociation of positive results with two tests in 78% of 58 cases, indicating the value of using both tests in screening early cases)

3 In a similar analysis of the value of the aforementioned tests in 38 clinical cases (acute hepatitis and cirrhosis) there was a positive cephalin test in 31 cases, and one or both thymol tests were positive in 32 cases; in other words, the combined thymol method exhibited almost exactly the same sensitivity as the cephalin test in this clinical group of cases

4 In a mixed group of 40 cases (clinical and subclinical) the combined thymol tests with p_H 7.55 yielded just twice as many positive tests as did those with p_H 7.8

With this important precaution added to the technic of the test, we have recently studied 40 normal young adults again. The results vary from 0.03 to 0.97 Ehrlich unit per hundred cubic centimeters of urine, with an average reading of 0.46 unit, which corresponds almost exactly with Watson's observations. If the important technical precaution indicated in the preceding paragraph is observed, any reading repeatedly over 1.0 unit should be regarded as indicative of some impairment of the function of the liver.

COMPARATIVE SENSITIVITY OF VARIOUS LIVER FUNCTION TESTS

Valuable information has been obtained from our recent comparative sensitivity studies and from the present study. The relative sensitivity of different liver function tests was determined by noting how many positive results were obtained with different tests in the same groups of cases (of different types). For the details refer to table 5 and previous publications.[1]

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[21] Schwartz, S., Sborov, V., and Watson, C. J.: Studies of Urobilinogen: The Quantitative Determination of Urobilinogen by Means of the Evelyn Photoelectric Colorimeter, Am. J. Clin. Path. **14:** 598-604 (Dec.) 1944.

[22] Kelly, W. D., Lewis, J. H., and Davidson, C. S.: The Determination of Urine Urobilinogen, J. Lab. & Clin. Med. **31:** 1045 (Sept.) 1946.

[23] Watson, C. J., and Hawkinson, V.: Am. J. Clin. Path., to b published.

In any comparative study of the relative sensitivity of various liver function tests, the more sensitive tests will appear highly sensitive in relation to the less sensitive tests if only early subclinical cases are studied. If only cases of advanced impairment of the liver are studied the less sensitive tests appear much more sensitive in relation to the decidedly sensitive tests, for obvious reasons. Most of our comparative studies reported herein were made on rather large groups of cases, including both many cases of early or subclinical impairment and a still larger group of cases of various degrees of hepatic disease, and with clinical as well as laboratory evidence for the evaluation of results. This representative type of clinical material was used in order to obtain an average estimate of relative sensitivity of these tests. The relative sensitivity of various liver function tests, as noted here, should only be regarded as approximate, since different studies of these tests on apparently similar groups of cases will give similar but not identical results.

TABLE 5—*Comparative Sensitivity of Various Tests*

(Data Obtained from Our Recent Comparative Sensitivity Studies)

1. Most sensitive tests (three times as sensitive as the earlier Rosenthal sulfobromophthalein test)
    - *A.* Cephalin cholesterol flocculation test (modified)
    - *B.* 45 min 5 mg. per Kg. photoelectric sulfobromophthalein test
    - *C.* Intravenous hippuric acid test (these three tests exhibited decided and almost equal sensitivity)
    - *D.* Combined thymol turbidity and flocculation method (p_H 7.55) (yielded 76% as many positive tests as cephalin test in subclinical cases, and 100% as many in mixed clinical group); cephalin and thymol tests have simplest technic
2. Tests with intermediate sensitivity (not equally sensitive)
    - *A.* Oral hippuric acid test (about one half as sensitive as previous tests); of special value in graduating the degree of impairment of the liver
    - *B* Thymol method (less sensitive p_H of 7.8) was about half as sensitive as the most sensitive tests in mixed group of cases of acute hepatitis and cirrhosis; in subclinical cases its relative sensitivity was less than 50% that of the three most sensitive tests
    - *C.* Urinary urobilinogen test
3. Less sensitive group
    - *A* Includes (1) the blood prothrombin after vitamin K, (2) serum albumin determination, (3) oral galactose tolerance test and (4) the blood cholesterol tests (total and esters)
    - *B* The sensitivity of these four less sensitive tests in relation to each other and to the intermediate group of tests varied in acute hepatitis and cirrhosis groups of cases
    - *C.* See table 6 for indications for the use of these less sensitive tests

GROUPS OF TESTS ESPECIALLY ADAPTED TO STUDY OF DIFFERENT TYPES OF HEPATIC PROBLEMS

Although this subject is not directly related to the main theme of this paper, for practical reasons and because of its empirical value to those who have not made a special study of the liver function tests that it is best to employ to obtain maximum information in a study of the various types of hepatic problems, information in this regard has been summarized in table 6.

FURTHER COMMENTS IN REGARD TO THE ELEVEN LIVER FUNCTION TESTS EMPLOYED

Certain liver function tests other than the eleven listed earlier in this article are employed elsewhere. Some of them are very satisfactory. It has been our experience, however, that these eleven tests are entirely adequate and satisfactory for the study of any hepatic problem. The small group of several tests best adapted to the study of each different type of problem should be employed in order to obtain a comprehensive picture of at least several functions of the liver.

1. Since the cephalin test has been rendered reliable by the suggestions of Neefe and Reinhold[4] (with elimination of its hypersensitivity and of false positive results with normal serums), since its technic is simple and since it is an exceedingly sensitive index of parenchymal hepatic impairment, it now represents the most satisfactory single screening test available to detect the cases of early hepatic impairment.

2. The forty-five minute 5 mg. per kilogram photoelectric sulfobromophthalein test is probably the most valuable single test available. It is a true test of hepatic function with a moderately simple technic, and it has a wide range of use and value. It is a good screening test because of its sensitivity, and it is the best single test available for evaluating cases of chronic hepatitis, hepatic cirrhosis and metastatic carcinoma of the liver. If the sixty minute reading is also obtained, this test is also of value in appraising serious degrees of damage to the liver. Furthermore, if the photoelectric method is used, this test can now be employed in cases of hepatic jaundice to determine liver function, as we have recently suggested.[24]

3. A. If the more sensitive p_H of 7.55 is used, the value of the thymol turbidity test is appreciably increased. The fact that this test is twice as sensitive with this p_H as with that of 7.8 renders the test valuable as a screening test for subclinical cases; and this more sensitive test is more valuable in clinical cases of chronic hepatitis and cirrhosis. Since the test is a quantitative test it also retains its value with the more sensitive hydrogen ion concentration in cases of acute hepatitis.

TABLE 6—*Groups of Tests Especially Adapted to Study of Different Types of Hepatic Problems*

1. Screening Tests for Early Liver Impairment:
    (*a*) Cephalin test, (*b*) thymol tests with p_H 7.55, (*c*) 5 mg. per Kg 45 min. sulfobromophthalein test and (*d*) serum bilirubin *
2. Early Differentiation of Obstructive and Hepatic Jaundice:
    (*a*) Quantitative urinary urobilinogen test, (*b*) oral galactose tolerance test, (*c*) oral hippuric acid test (or interavenous method) and (*d*) blood prothrombin (vitamin K response)
3. Acute Hepatitis (Initial Impairment and Progress):
    (*a*) Serum bilirubin, (*b*) cephalin test, (*c*) thymol tests, (*d*) urinary urobilinogen and (*e*) hippuric acid test (oral or intravenous)
4. Chronic Hepatitis and Hepatic Cirrhosis
    (*a*) Sulfobromophthalein, (*b*) cephalin, (*c*) thymol tests (p_H 7.55), (*d*) oral hippuric acid, (*e*) serum albumin and (*f*) blood prothrombin
5. Metastatic Carcinoma of Liver:
    (*a*) Sulfobromophthalein test and (*b*) oral hippuric acid test
6. Maximum Liver Impairment (unfavorable prognosis):
    (*a*) Low serum albumin, e g., below 2.5 Gm. per 100 cc, (*b*) low oral hippuric acid below 50% of normal (below 1.5 Gm), (*c*) low blood prothrombin of 10% to 15% of normal, or lower,† (*d*) very high sulfobromophthalein retention (60 min. reading)

* The intravenous hippuric acid test is sensitive enough to be included among screening tests, but its technic is complicated.

† In fatal acute yellow atrophy cases we have seen blood prothrombin drop to 0 in spite of vitamin K therapy.

B. The two advantages of adding the thymol flocculation determination to the thymol turbidity reading as a routine procedure have been noted previously herein.

4. The oral hippuric acid test as simplified by Boyce and McFetridge[6] is, because of its intermediate sensitivity, a particularly valuable test to graduate the degree of subclinical impairment of the liver when the most sensitive tests have yielded positive results.

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[24] Gaebler.[2a] Mateer, Baltz, Comanduras, Steele and Brouwer.[1c]

5. As emphasized by Tumen and Bockus,[11] the serum albumin determination is of particular aid in the evaluation and prognosis of hepatic cirrhosis.

6. If vitamin K is given parenterally for several days before the prothrombin level of the blood is determined, the four possible causes of a low blood prothrombin determination other than impairment of the liver are all ruled out, and the serum prothrombin test becomes a reliable and valuable index of hepatic function. It is especially valuable in demonstrating the more serious grades of disease of the liver.

7. The quantitative serum bilirubin determinations are of aid (1) in detecting early subclinical jaundice and hepatic impairment and (2) in following the complete course of either hepatic or obstructive jaundice. In hepatic jaundice it is a rough index of liver function.

8. The oral galactose tolerance test, one of the less sensitive tests, is of practical value mainly in helping to differentiate obstructive and hepatic jaundice.

9. The total blood cholesterol and ester level constitutes a still less sensitive and also less specific index of liver function, which we employ only occasionally. A definite and progressive decrease in the esters suggests progressive and often serious hepatic damage. In chronic cholangiolitic hepatitis there is usually a particularly high total blood cholesterol determination, along with relatively normal results from other liver function tests. This recently emphasized disease consists of an intrahepatic obstruction due to a chronic inflammatory reaction in the region of the small bile ducts which causes intrahepatic obstructive jaundice.

10. The intravenous hippuric acid test has been discussed in detail in a previous publication.[1a] It is an excellent and decidedly sensitive test. However, the technic and time involved are greater for this than for the other tests mentioned.

11. The simplified quantitative urinary urobilinogen test merits wider use in the types of hepatic disease previously indicated.

TYPE OF THERAPEUTIC TEST EMPLOYED

1. *Diet.*—The program of intensive liver therapy employed in the treatment of these early subclinical cases has been essentially the same as that employed in the treatment of cases of advanced hepatic disease. The diet has been high in carbohydrate, high in protein and rather low in fat and has contained 350 to 400 Gm. of carbohydrate, 125 to 150 Gm. of high quality protein [25] and 35 Gm. of fat each day (2,215 to 2,515 total calories). Recent experimental work indicates that there is no objection to giving enough fat to make the diet palatable in these cases, except for the steady gain in weight which results from increasing the total daily caloric intake.

2. *Vitamins.*—These patients received an adequate supply each day of properly balanced vitamin B complex (two capsules before each meal) to aid in metabolizing the high carbohydrate intake. This is important. Since the administration of unbalanced thiamine has a proved antilipotropic effect in aiding the deposition of fat in the liver, the importance of not giving large doses of thiamine unbalanced with B complex is obvious, not only in these patients with impairment of the liver but also in normal persons.

A potent supplementary vitamin A capsule [26] was also administered each day because of (*a*) the relatively low fat diet and (*b*) the low vitamin A content of the blood in the presence of hepatic impairment, as demonstrated by Ruffin and Wise.[27]

3. *Choline Chloride.*—Although not always essential, choline chloride (10 to 15 grains, or 0.65 to 0.97 Gm., before meals) has also been included in this program. (We have seen cases of acute hepatitis with poor appetite and, therefore, with inadequate protein intake, whose unfavorable course has been abruptly altered when choline chloride was added to the other treatment.) Choline has a desirable effect on the liver in any persons whose protein intake has been inadequate.

SUMMARY

1. In those cases presenting positive results with the more sensitive liver function tests (screening tests), we have emphasized the value of subsequently using the less sensitive tests in an initial attempt to determine the degree of impairment of the liver present in those patients who have not yet developed clinical evidence of hepatic disease.

2. The main objective, however, of this communication is to advocate a new method of refining the interpretation of positive results with the more sensitive liver function tests in identifying early subclinical cases of chronic impairment of the liver, particularly in those patients in whom negative results have been observed with the less sensitive tests. This method consists of subjecting these patients routinely to a therapeutic test of intensive liver therapy and then observing the time required for reactions to these sensitive tests to return to normal. The length of time required varied from seven days to fifteen months. The important deductions to be drawn from this varied response have been discussed. The employment of a therapeutic test to evaluate the positive results of the more sensitive liver function tests provides early diagnosis and effective early treatment in these neglected subclinical cases of early impairment of the liver.

3. Evidence is outlined for the validity of the diagnosis of chronic subclinical hepatic impairment.

4. Reference has been made to our previous publications,[1] in which the prevalent normal standards of the newer and more sensitive liver function tests have been intensively studied and corrected normal standards suggested, wherever indicated.

5. The value and sensitivity of the thymol turbidity test has been studied further. The desirable effect of the reduction of the p_H of the thymol buffer solution from 7.8 to 7.55 in doubling the sensitivity of the test for screening purposes is discussed in detail. The two advantages of adding a thymol flocculation determination to the turbidity reading are also noted.

6. The advantages of the photoelectric over the comparator block sulfobromophthalein sodium (bromsulphalein) test are outlined.

7. Special reference has been made to the recently suggested simplified quantitative urinary urobilinogen test of Watson, not referred to in our previous publications. Results of normal control studies with this test are reported.

8. The comparative sensitivity of the newer and for the most part more sensitive liver function tests with

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[25] The meat, milk, cheese and other protein in the diet are supplemented by giving (in skimmed milk) a particularly well tolerated and palatable "partially hydrolyzed lactalbumen protein powder," rich in methionine as well as other amino acids but digested only to the peptone stage. This powder was obtained from J. B. Roerig and Company, Chicago, and the Gelatin Products Co., Detroit. It is called "Lactenz."

[26] Apexol, J. B. Roerig and Company, Chicago, contains 50,000 U. S. P. units of vitamin A

[27] Ruffin, J. M., and Wise, B.: The Value of Plasma Vitamin A Determinations in the Differential Diagnosis of Jaundice: Preliminary Report, Gastroenterology 4:466-472 (June) 1945.

each other and with certain of the older tests has been studied in detail and summarized.

9. Although the subject is not directly related to the main objective of this publication, for practical reasons and because of its empirical value the particular small subgroups of tests best adapted to the study of each of six major types of hepatic problems have been tabulated.

10. Special comments have been made with regard to the advantages and limitations of the eleven important liver function tests referred to herein and employed in this clinic.

11. The program of liver treatment employed in the previously mentioned therapeutic test has been described.

12. If such a therapeutic test were routinely applied promptly to all cases of chronic subclinical impairment of the liver demonstrated by the more sensitive liver function tests, three important objectives would be realized: (1) refinement of the interpretation of the sensitive tests as to the approximate degree of impairment present; (2) measurement of the magnitude of the therapeutic problem in each case, and (3) insurance of early and effective treatment of such patients before an advanced stage of hepatic disease has developed.

THE HEALING OPEN PILONIDAL WOUND

Unique Characteristics and Clinical Implications

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Pilonidal surgery is even yet in disserviceable confusion. The approach of choice would seem to be that which first establishes fundamental principles based on an understanding of the unique characteristics and singular behavior of the pilonidal wound and proceeds from there. Instead there has been a trend toward the more devious methods of trial and error with emphasis on schemes of primary closure and largely with the tacit predication that the open method has long since reached a dead end. Furthermore, these efforts have not always respected affective variables or controls necessary to unimpeachable interpretation. Success has been individually attributed to various exclusive elements of meticulousness presumed to have been neglected by others. These include the use of special suture material or pattern of suture, different ways of obliterating dead space and of eliminating infection, preoperative preparation at times more prodigious than the surgical procedure itself and new "plans" of operation—with every variation of detail a "new" operation. Somehow one gathers the impression of attaining simple ends in an arduous way. The natural desire for the feasibility of primary suture has of course not dampened precipitate enthusiasms. Sulfonamide compounds used in the open wound had their day. Now it is penicillin. But unfortunately reports have merged its use inextricably with that of other variables, instead of first determining specifically by the use of controls just what results, if any, one can count on by its use alone in the prevention and elimination of infection in the pilonidal wound. I, myself, who have been kept awake sleepless nights by penicillin injections, would prefer to be one of the controls if included in such an experiment.

The situation becomes the more fatuous when it is realized that not only are the results themselves conflicting but that even the measures of appraisal—the very means of evaluating results—contribute to confusion by their susceptibility to differences of interpretation and emphasis. The foundation of pilonidal surgery has rested on statistics reduced to the two common denominators of recurrence rates and healing time. Yet nowhere to my knowledge is there statistical analysis of the causes of recurrence or even complete descriptive analysis, which is hardly a propitious beginning. There has been no explanation or even mention of the fact that the recurrence figures following the open method tend to be more dependable than those for suture and unduly advantageous to the latter method. Again, seldom in the literature is there a stated compliance with a sufficient time element of recurrence, to say nothing of common agreement or even suggestive evidence in regard to what constitutes sufficiency. By legitimate comparison, of what value would recurrence rates of cancer be with indifference to postoperative time lapse? I have encountered recurrences ten years after apparently successful suture; and yet there have been recurrence rates reported almost before removal of the last suture in the series or with incomplete data on the point. If this lapsed time were the same for both open and closed methods of surgical operation it could be disregarded as a constant mathematical factor. However, such is not the case.

The periods of healing time, hospitalization and disability have all been used as measures of comparison. Of these, healing time has received the most emphasis, although it actually means less to the patient and hence is of less real clinical significance than the periods of either hospitalization or disability. How long will the patient be in the hospital and, in particular, how long off the job? Those are the measures of his expense and of true surgical adequacy. In my experience total hospitalization requirements can be less by the open than by the closed method. While average disability exceeds healing time of the sutured wound, it is considerably less than the average time required for complete healing of the open wound. Furthermore, it seems strange never to have seen the requirements of recurrent cases, or at least their reckoned equivalent, averaged in with the original series in which they occurred. Such calculation would at the same time and in strict fairness count the factor of recurrence and yet dispense with it as a separate denominator. In other words, what is the average disability not just to operate on but to finally cure 100 cases of pilonidal disease—that is my suggestion for a simple, fair and inclusive criterion of method.

In the recent war the Army and Navy had their own system of computing disability. The recent literature has been largely preempted by service reports on primary suture, and a representative one showed 80 per cent of patients subjected to varying periods of treatment, disability or hospitalization in order to prepare infected cases for primary suture. But all this did not come within the military standard of healing time: preoperative time is apparently not time as it is known to ordinary mortals in civilian life and is simply crossed off the ledger as a figment. Then in the services—and only there—a patient is completely disabled while there remains even a microscopic vestige of granulation tissue, and as long as he is thus "disabled" he is hospitalized—

Read before the Section on Surgery, General and Abdominal, at the Ninety-Fifth Annual Session of the American Medical Association, July 4, 1946.

with cost no object. Thus healing time, disability and hospitalization become synonymous. In the light of this background healing time acquires a different meaning than in civilian life where an hour is an hour to all concerned (whether before or after surgical operation), where the patient can return to work when he feels able and where neither hospitalization nor disability benefits fall like manna from heaven. Here then must be recognized an anomalous integration of the three indexes, wherefore one should not without question or reserve transpose endorsement—lock, stock and barrel—to the dissimilar circumstances of civilian life.

Even were all this confusion of recurrence rates and healing time adjusted there must still be recognized a distinctly separate basis of choice for the occasional pilonidal operator, who after all probably performs the major portion of this type of surgical operation. For him the chief obstacle is actually that of complete excision of the lesion. Then all else becomes subordinate to which method favors the most forthwith determination of this mistake and the most expeditious means of restitution (fig. 6).

It is not my present objective to make a comparative appraisal of method but to cast doubt that the full potentialities of the open method have been reached and to indicate measures which might result in improvement—if and when one desires to use the method.

One cannot fully understand all that is involved until one discerns the peculiarities of the healing open pilonidal wound and its bearing on recurrence and on delayed healing, which latter has constituted the chief source of criticism and dissatisfaction.

Open pilonidal wounds usually heal in every respect like normal granulating wounds elsewhere, or occasionally they may exhibit varying degrees of delay in healing which amounts at times to prolonged periods or even to complete refusal to heal. Such behavior is independent of whether the wound was left open from the start or subsequently broke down following primary suture. For nomenclative convenience these are called "distressed wounds." The distressed pilonidal wound is a unique entity. It has been misconceived as an integral unit, whereas close observation reveals distinct —and untoward—characteristics in different parts. These do have a relationship to the proclivities of the wound as a whole—obviously no wound can heal unless its parts heal—but the most resourceful therapy is contingent on the correlation of these distinctive features and their morbid issues.

The bony surface which underlies the pilonidal wound is not flat longitudinally but a convex curve, which curve is continued in the soft parts between the coccyx and anus. Later one finds that even this simple fact is of practical use. The soft tissues comprising the area include a relatively flat area near the point of origin of pilonidal disease and a comparatively flat surface around the anus, but between the two there is a cleft whose surfaces are at right angles to these other surfaces—the whole resembling a twisted lemon peel. Now it makes considerable difference whether a lesion is limited to the flat area over the sacrococcygeal joint or whether it extends into the cleft. If limited to the flat area, and also as it is more superficial, the operative wound more nearly resembles ordinary wounds and thus presents only common surgical problems—or, more to the point, lack of special problems. Extension through the intergluteal cleft bears on topics both within and beyond the scope of the present paper: they include the choice of operative method, healing time and delayed healing, recurrence and the acceptable interpretation of relevant statistics.

Before continuing with this topic it is necessary to interject for the sake of completeness that perhaps the most commonly seen cause of delayed healing and recurrence is unrelated to any unique characteristics of the pilonidal wound itself. That cause is incomplete operative removal of the lesion. For the sake of brevity I confine myself here to a short statement concerning it. 1. Incomplete removal is far more common than is realized, as I have repeatedly demonstrated, and yet recurrence statistics in the literature assume without exception that complete excision has been performed. This falsely serves, among other things, to obliterate statistical favorableness as between operative methods. Perhaps this will be clearer if the increase of the factor to the n^{th} degree is assumed, when recurrence after any method whatsoever will inevitably be 100 per cent. Here is another source of statistical error which can be added to the previous list. 2. In conjunction with block dissection the pathologic report can and should be helpful in warning of missing portions. 3. If not too flagrant, the error can be rectified in the course of the postoperative office care, provided that the error is determined early either by the pathologic report or by trained and persistent observance of the healing open wound. Such an expeditious termination is of course impossible in a sutured wound.

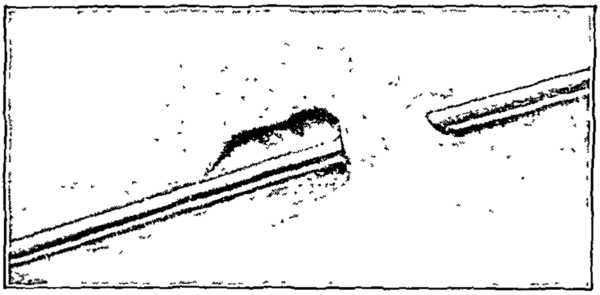

Fig. 1.—Superficial bridging of a healing open pilonidal wound as revealed with a probe. The same process also occurs with new granulation tissue in the depths of a wound. Undetected, bridging organizes into a permanent postoperative sinus which is clinical recurrence.

Perhaps the chief untoward characteristic of the open pilonidal wound is one which is common to fistula surgery, namely, the tendency of both *granulation tissue* and skin to "bridge" across (fig. 1). This leaves an underlying channel which is readily overlooked by inspection alone, for it is of a diameter often not greater than that of a probe and demonstrated only by its persevering use. Bridging is not of itself a reversible process, does not tend to rectify itself and if left intact becomes, or rather remains, a *permanent sinus. On the* other hand its effacement is readily effected if and when discovered. Otherwise it merges imperceptibly but inexorably into permanent refusal to heal. It is remarkable how hazy an idea the mechanism of recurrence is in the minds of many who nonetheless undertake pilonidal surgical operations, and how predominant is its vague association with infection. There are just two common sources of recurrence in the open wound, namely, a retained portion of the original sinus and the organization of bridged tissue into a postoperative incisional sinus. Control of recurrence in the open wound is then contingent only on complete removal of the sinus and on the prevention or destruction of postoperative bridging. (I shall later add a third possible cause of recurrence.)

Clinically, recurrence in the open wound—from any cause—is permanent delayed healing: that is, there is seldom any intervening period of complete healing. Here lies the mentioned source of error in the comparative statistics of recurrence as between the open and closed methods. With the patient continuously under observation for failure to heal and with delayed healing merging imperceptibly into recurrence, the surgeon can hardly fail sooner or at least later to become aware of recurrence. In contrast, recurrences following suture are wont to occur long after apparently satisfactory healing *and the discharge of the patient from observation*. Recurrences following the open method tend thus to obtain accurately in one's own statistics; those following the closed method too frequently come to light in some one else's figures. I have lately encountered recurrences after suture in patients discharged from service hospitals as cured, several years following operation.

Although bridging is commonplace in proctologic practice there seems to be little explanation of its mechanism in precise terms. It is undeniable that there somehow exists causal relationship between bridging and infection, and that is about where the matter has rested. Whatever this relationship, it is more pertinent from a practical point of view to know that the control of bridging, both prevention and cure, is not dependent on the control of infection (*in the open wound, that is*). Furthermore—and bearing on the prevention of bridging—infection would be impotent in its effect were it not for a certain tendency universal to wound healing—that of contraction. One learned in one's first pathology course that "In the first healing of the wound and in the course of formation of the granulation tissue a good deal of contraction occurs" (Mac Callum). One relearned it when one saw burns heal with contractures. But the association with surgical operation on fistulas has been out of mind. The next step in explanation is the interrelationship between this contractive force, the shape of the wound and euclidean geometry. In cross section a V-shaped wound, such as the pilonidal, constitutes two sides of a triangle which are in combined linear measurement greater than the third side, which is the air space between. The force of contraction on the uniting tissue in the cleft would therefore tend to detach it from the sides to the shortest conceivable locus, namely, the site of the projected third side (fig. 2). With a given contractile force, the more gradual the slopes of the wound the less separation there tends to be from the base and the broader the area over which it occurs; with the shallow wound which the proctologist has learned to seek in fistula operations there is induced the minimum tendency to bridging and the maximum vulnerability to its spontaneous disruption by everyday trauma. In a completely flat wound the force of contraction is exclusively lateral, operating only to separate the uniting edges from each other and not from the base.

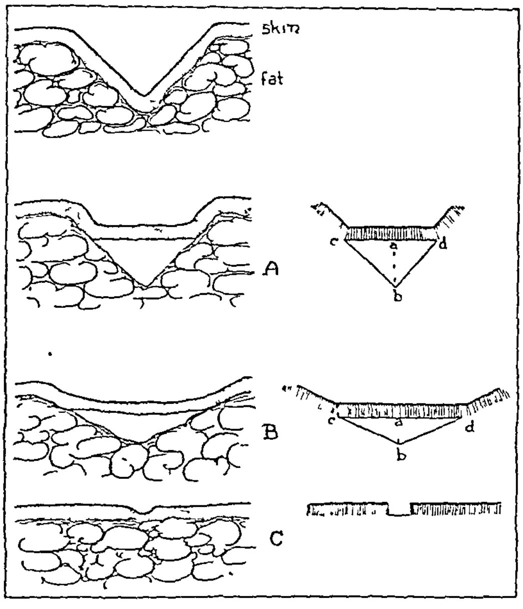

Fig. 2.—Relationship between contraction of healing tissue, slopes of the walls of a healing wound and postoperative bridging—in other words, the relation between saucerization and recurrence Upper cut shows skin edges united at the bottom of a healing wound in cross section. Cut *A* shows the ensuing effect of tissue contraction: distance *a* is less than that of the combined sides *bc* and *bd* and is the shortest possible locus of the involved tissue under contractile stress. Cut *B* shows the effect of more gradual slope to the sides the resultant component force *ab* is less than *ab* in *A*, and *cd* is greater than *cd* in *A* There tends, therefore, to be less separation from the base and over a broader area While illustrated for healing skin, the same principles hold for organizing granulation tissue Gentle slopes (saucerization) therefore not only lessen the likelihood of bridging—and hence to recurrence from bridging—but also favor destruction of bridging from natural trauma. In *C*, a flat wound, the vertical component for *ab* has reached zero, and hence there is no tendency to separation from the base and to bridging

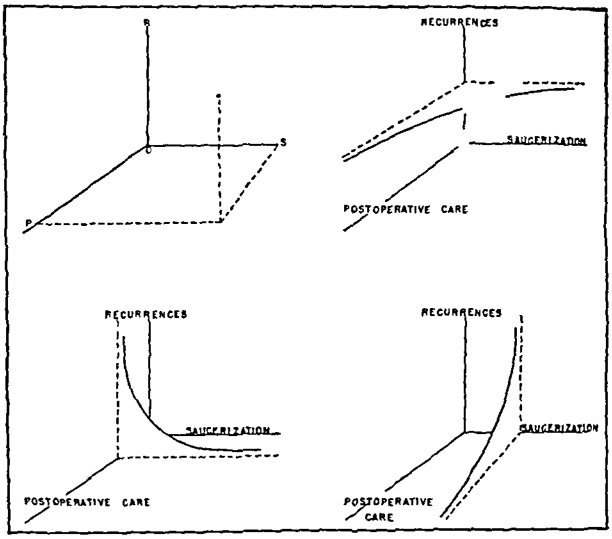

Fig. 3—Relationship between three variables involved in pilonidal surgery—saucerization, recurrences, and postoperative care. The cut upper left shows plan of locating a point in space by plotting of three variables Upper right shows by this method of plotting the relationship between saucerization and postoperative care when the factor of recurrence is assumed to be a constant. Thus postoperative care (including both quantitative and qualitative aspects) necessary to achieve a minimum recurrence rate varies inversely with the degree of saucerization obtained The ideal point on the curve is that at which with reasonable postoperative care the least amount of saucerization is conceded to assure against recurrence Cut lower left shows relationship between recurrence and saucerization under the imposed assumption of postoperative care regarded as a constant, which more or less tends to represent a true state of affairs In general, both the tenacity and skill of attention tend to be a constant for a given person, although varying between different persons And for a particular task, effective effort by the individual surgeon is constrained to a constant by his training and knowledge—or lack thereof: for example, if he does not know how to detect bridging, what causes recurrence or how to cope with delayed healing postoperative care will remain a minimum constant At best therefore, and for all surgeons, the recurrence rate bears inescapable inverse parallelism to saucerization Cut lower right shows the relationship between recurrences and postoperative care with imposed restrictions to saucerization Sacrifice of any normal tissue is always of itself a relative restriction it approaches the absolute as the dissection encroaches into the intergluteal cleft for reasons described under figure 4 Therefore recurrence rate is affected not only by the skill manifested in the operating room but also by that of postoperative care *In short, the surgeon can trade skill for detractive features of the open operation, and recurrence rates are a measure of the surgeon rather than of the method*

The conversion of wounds with steep sides to shallow forms for the prevention of bridging is called "saucerization," which in itself is nothing new. But from my explanation the principle can be stated that *the tendency to bridging, and hence both to delays in healing and to recurrence from the source, vary inversely with the degree of saucerization obtained. It also follows* then that both the diligence and competency of postoperative supervision necessary to prevent delayed healing and recurrence due to bridging vary inversely with the degree of saucerization obtained. At one extreme, simple incision of a sinus would pose the choice between an inordinate recurrence rate or such excessive postoperative care—amounting really to frequent reoperation—as to be impractical. At the other extreme, optimum shaping of the wound is sometimes either impossible or entails such sacrifice of tissue as again to prove impractical. Between these extremes one could trade tissue for security of the end result—as far as bridging and its outcome are concerned. The expert can and will, instead, trade skill for tissue: with forethought and planning in regard to an acceptable shape of the wound, it can be accomplished without the sacrifice of more tissue than is actually necessary for resection of the sinus—an "acceptable" shape, that is, in conjunction with the postoperative care of the expert. Thus every surgical operation represents, wittingly or no, the intersection of plottable variables (fig. 3). The ideal point is that at which with reasonable postoperative care there is the minimum loss of tissue necessary to assure uneventful healing. This is influenced by several factors, such as the depth of the sinus from the surface, the extent and complexity of pattern and the peculiarity of the anatomic situation.

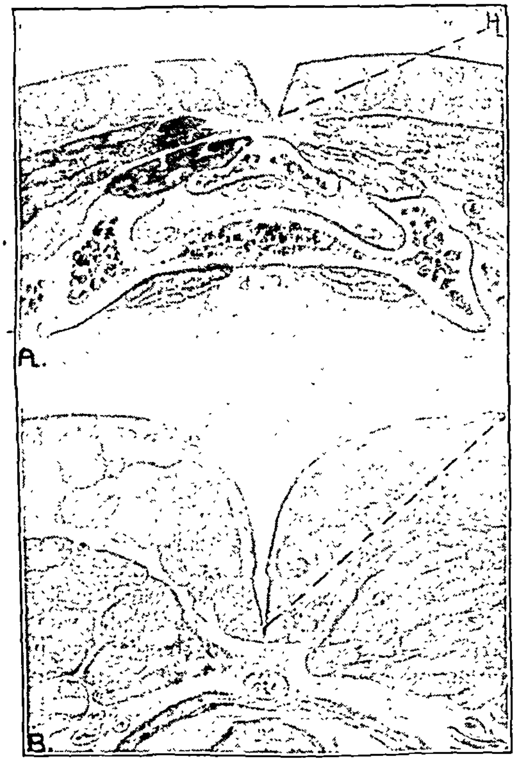

Fig. 4.—Illustrating the limits to saucerization of open pilonidal wound imposed by encroachment through the intergluteal cleft. The broken line in *A* shows the ease with which saucerization is obtained in ordinary sinus wounds or in pilonidal wounds which are limited to the flat surface near their origin. *B*, a pilonidal wound in the intergluteal cleft with the skin and wound surfaces in apposition. The broken line shows preposterous amount of buttock which would have to be removed in order to obtain even less saucerization than there is in *A*.

Elsewhere anatomic restrictions to saucerization in connection with anal fistulas have been discussed.[1] There is also anatomic restriction with pilonidal wounds. Because the intergluteal cleft, in particular, interferes with healing saucerization is most urgently needed there: but unfortunately that is also a place in which little saucerization can be accomplished because each of the lateral sides of the wound is part and parcel of the buttock. Theoretically desirable saucerization would involve preposterous loss of the buttock, as illustrated in figure 4. Thus is derived the compensatory necessity of proportionally more meticulous postoperative diligence if and as the wound encroaches on the intergluteal cleft—vigilance in recognizing and disposing of bridging and vigilance in utilizing other compensatory measures which I shall explain. Here, then, are characteristics whose implications are a forewarning.

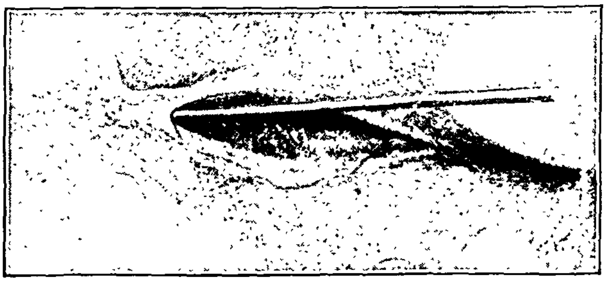

Fig. 5.—Overhanging skin end with the probe extending about ⅜ inch (1 cm.) under it. This wound had shown little if any progress toward healing for a period of six months. The treatment during that time had been office curettement and application of antiseptics. For the cause and treatment see legend for figure 6.

Now most surgical wounds everywhere heal predominantly from the sides. It seems never to have occurred to anyone that a wound can heal from the ends as well as from the sides and that if special difficulties are encountered with the latter—such as with cleft encroachment—special compensating use might be made of healing from the ends. Certainly there should be inquiry as to possible local interference with at least normal healing at these two critical points.

Observation of the ends of distressed pilonidal wounds often reveals a rounded, sharp, overhanging skin edge—or, if one prefers the description, an undermined skin edge (fig. 5). Like bridging, this is a cardinal indication of trouble and should be promptly recognized as such. One does not have to search for it as one does for bridging—it is there for all to see. It is a sign that the time for passivity has lapsed and that a reappraisal by immediate and searching examination of the wound is imperative. Notwithstanding which, such conditions are allowed to drag on for useless weeks

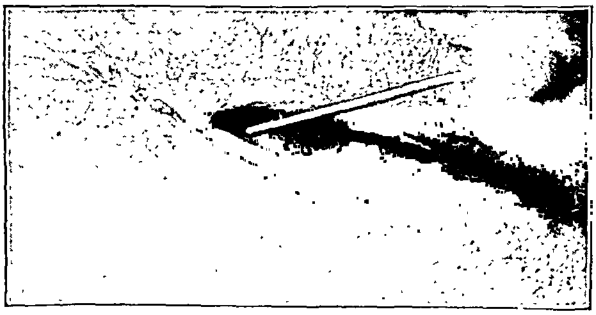

Fig. 6.—This is the same case as figure 5. Careful probing revealed a retained portion of the original sinus going off to one side. (Postoperative incisional sinuses almost invariably occur strictly in the longitudinal direction of the wound.) Reoperation corroborated the diagnosis. After removal of the lesion in the operating room the wound healed promptly. This case illustrates delay of healing and recurrence often blamed on the open method and due instead to fault of the surgeon. The latter had also failed to avail himself of one of the chief advantages of the open method, namely, the early recognition of incomplete operation.

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[1] Blaisdell, P. C.: Traumatic Injuries of the Rectum, J. A. M. A. 128: 559-563 (June 23) 1945.

or even months to the disgust of the patient, the discredit of the surgeon and the undeserved disrepute of the operative procedure.

There are only three common causes of undermined skin ends. Two of these are, respectively, an underlying retained portion of the original pilonidal sinus and underlying postoperative bridging. In either case the undermined end is obviously an omen of trouble requiring radical intervention. The fault lies not with the method but with the surgeon: it is his fault that such a stage is reached, that further procrastination is indulged and that recurrence rates are adversely affected. One begins to suspect that there are ways and ways of performing the open operation as well as the closed.

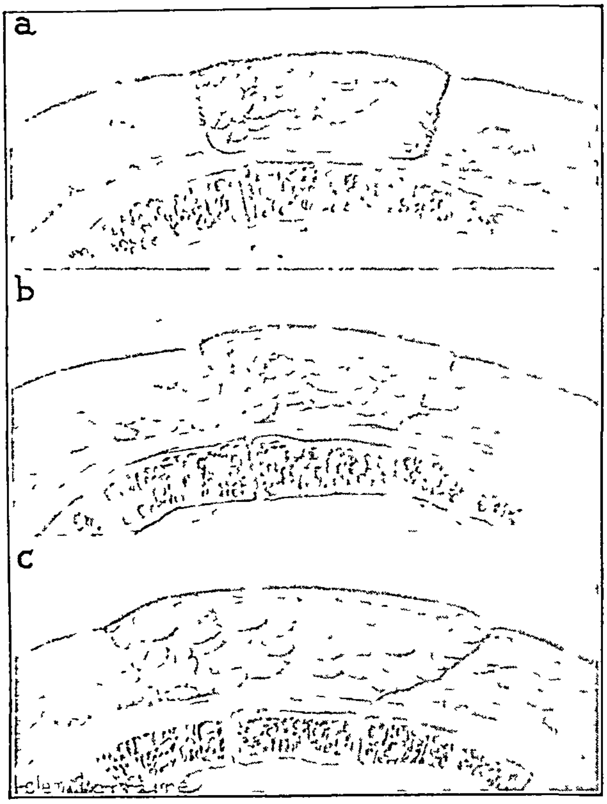

Fig 7 —Several degrees of slope to the ends of open pilonidal wounds. Cut *a* shows steep ends which commonly result unless particular attention is paid to the point; these predispose to overhanging ends and delayed healing In *b* the wound has actually the same length at the skin level as that shown in *a* The sloping ends have been achieved at no extra sacrifice of normal tissue but by forethought and care in planning and dissection Cut *c* shows gently sloping ends achieved by simple incision at the ends of the wound shown in *a* Incision was carried from the floor of the wound to the surface of the skin at about 1 inch (2.5 cm) away from the original ends of the wound Although in cross section this wound looks larger than that in *a* there is actually no additional loss of tissue, and the wound will heal faster and with less likelihood of delay.

The third cause of an undermined end is a characteristic of the healing pilonidal wound never heretofore envisioned. It reverts to the same contraction of healing tissue which causes bridging, the effect simply altered by different circumstances. The force of contracture on the circular skin as it dips into the wound and clings to the underlying granulation tissue is analogous to a tightening purse string, were it placed at the very edges. The skin tends to detach as if to span the cavity like a drum head. In terms of mathematics and geometry this is because the area of the wound at skin level is less than that of the actual wound surface. The mechanism is imitated by dipping a rubber dam into the wound in contact with all raw surfaces and then pulling on the periphery. Steepness of the end of the wound pertains exactly as steep sides to linear bridging. That is, gradual longitudinal slope from the ends to the floor serves to prevent overhang just as saucerization of the sides counteracts bridging. The same rule applies in both instances, viz., the more gradual the slope the less separation of skin from its base.

Unlike saucerization, gradual slopes of the longitudinal ends of the wound can always be accomplished, and remarkably, with no sacrifice whatsoever of tissue All that is necessary is a simple linear incision at both ends, from the floor of the wound gradually sloping longitudinally upward and outward to the skin surface about 1 inch (2.5 cm.) or so away (fig. 7). Hardly anywhere will so little assure so much.

Perhaps the reason that there is not even more trouble from steep ends is that the shape of the area from the sacrum to the anus is, as has been pointed out, a curve; longitudinal incision across this tends automatically to create a flat chord (fig. 8). But the same figure also reveals the common mistake of failing to complete the chord at the extreme ends—right at the most critical places. Only a trifle of extra attention—often just a tiny snip at either end—will determine whether the case will appear in some one's statistics on delayed healing and thereby cast unwarranted reflection on the open method. I cannot say at this time that this mechanism acts as an absolute deterrent to healing—a third possible cause of recurrence.

The treatment of an undermined skin end begins with now obvious means of prevention. It continues postoperatively with the immediate severance of bridging and with the maintenance of a flat or gently curving longitudinal floor by breaking down newly formed tissue out of line.

Confronted by the actuality of an overhanging skin end one should usually insist on examination of the patient under anesthesia, particularly if there is not a pathologic report which offers convincing evidence of complete original dissection. Thorough exploration and restoration of a distressed pilonidal wound are hardly feasible in the office, and complacency in this plan compounds delay. Retained sinus remnants and deep bridging can be dependably disposed of only with hospital care. An overhanging end due to failure in achieving at surgical operation or in maintaining afterward a flat floor can be corrected by the dissection procedure which I have used—under certain circumstances in the office (fig. 9).

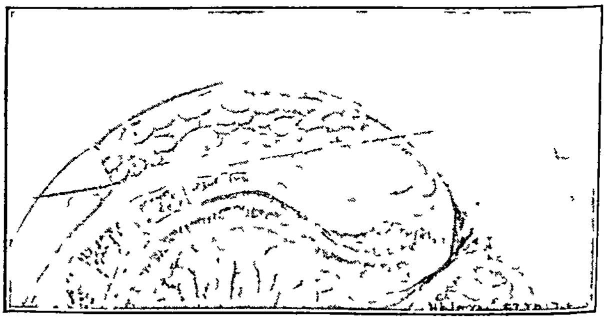

Fig 8 —A pilonidal wound naturally tends to occupy a chord across the curved surfaces of the area involved. Failure to complete the dissection, along the dotted lines, creates steep ends Simple linear incision along this dotted line would prevent overhanging ends which tend to form by reason of the steepness and would thus insure uneventful healing

Another characteristic of the healing open pilonidal wound is the excessive accumulation of exuberant granulation tissue. Regarded as a cause of delayed healing it is routinely treated by curettement. This is commendable practice although any improvement is probably due to destruction of either undetected bridging or retained sinus remnant. Seldom are the results epochal, which indicates that excessive granulation is an effect rather than a cause. This is further borne out in that it always accompanies delayed healing due to lesions previously described—retained sinus, postoperative bridging and overhanging ends—and recedes as they are counteracted. These three things, then, should be specifically sought when exuberant granulation evidences delayed healing.

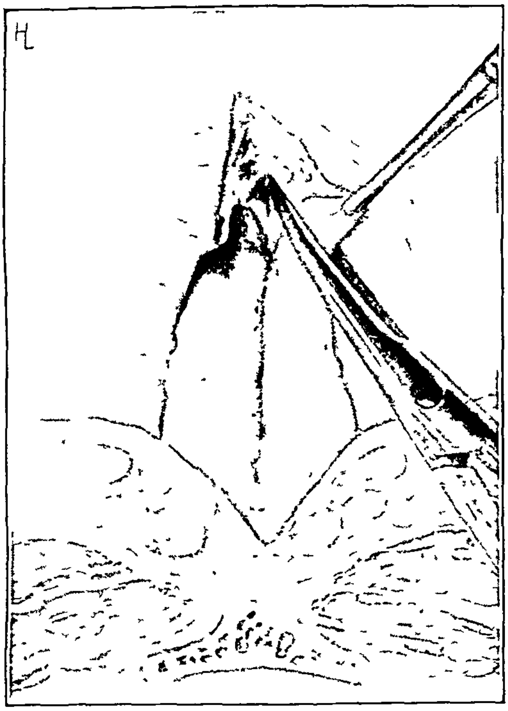

Fig. 9.—Dissection to correct overhanging ends when they have been due to steep wound ends. A sloping linear incision is made from the floor of the wound to the skin margin 1 inch (2.5 cm.) or so distant, and each side then is snipped with scissors as shown. This is technically possible in the office, and often feasible if one is sure that neither retained portion of the original sinus nor underlying incisional sinus is present.

In addition, excessive granulations occur when none of these three factors can be found. In my search for this further source of protracted healing I assumed as logical that a unique phenomenon could be attributable only to some unusual circumstance. The sole conspicuous possibility which came to mind was the rubbing together of the opposing surfaces of the wound as they involved the opposing buttock. Here is a circumstance found nowhere else and theoretically destructive of delicate new tissue: here is a parallelism of increasing etiologic trauma and redundance of new tissue as the wound embodies the intergluteal cleft. The validity of this surmise was substantiated by the dramatic results which attended my first test of a simple device to protect the wound surfaces.

The case was that of an 18 year old girl operated on by another surgeon and referred to me because after a period of two and one-half months there seemed little progress toward healing. In spite of repeated curettements both the patient and surgeon had become discouraged. Minute examination revealed no bridging or evidence of retained sinus or overhanging ends. Treatment consisted of drying all surfaces thoroughly and then applying a wide piece of adhesive lengthwise after flaming it to maximum stickiness. It was pressed into intimate contact with the raw wound surface by running the fingers longitudinally along the floor before applying pressure over the skin margins. When the patient returned a week later I was astonished to find the wound completely closed. It separated somewhat several days later but healed promptly and permanently after one more application of adhesive.

I now use an improved adhesive dressing (fig. 10), applying it as soon as possible and changing it soon after it works loose in about five days. Patients have remarked on the added comfort. Of course one who uses this procedure as a complete system of therapy in itself is doomed to disappointment. No doubt much the same effect is accomplished by rest in bed, though to what comparative degree it is impossible to say. Certainly it is a poor substitute in terms of convenience and expense to the patient.

Discussion of the open pilonidal wound would be incomplete without a word of emphasis as to infection, which, by and large, plays a negative role. Comparable open wounds after surgical intervention in the acute or in the quiescent stages show little significant difference in the patients' days of disability. (This does not hold for sutured wounds which break down because of infection. and the considerable additional time of disability involved counsels against the attitude that at least there is nothing to be lost in attempted suture.) Neither is infection in itself a material factor in delayed healing: the latter never looms until long after clean granulating surfaces have superceded evidence of what in any wound would be recognized as problem infection. Nor is control of either delayed healing or recurrence dependent on control of infection. Infection is simply not a problem of the open pilonidal wound. In deference both to the essentially infective propensity of the pilonidal lesion itself and also to the proximity of anal contamination this is eminently worth remembering.

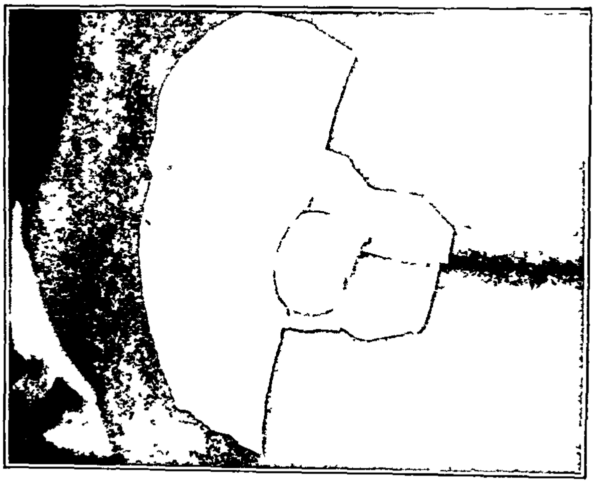

Fig. 10.—Improved adhesive dressing to prevent delays in healing due to trauma of opposing wound edges. The adhesive is applied in two separate layers of overlapping strips. All strips are well flamed before application to insure maximum adhesiveness. Both layers are applied transversely. The first is carried to the depths of the wound by making contact there first before applying pressure to the lateral skin edges. The photograph shows the second layer about three fourths completed, with cotton packed tightly between it and the first layer before continuing to completion. A final longitudinal strip of adhesive over all is carried in the midline from the skin above down to the perineum for the purpose of reenforcement.

One begins to discern how the establishment of and reference to principles answers questions as they arise. For example one can anticipate that a sulfonamide drug in the open wound will not solve all that is involved in delayed healing: one will differentiate the possible favorable consequences of accompanying rest in bed. On a broader basis one gains assurance that there is little which is inductive of delayed healing and recurrence which cannot be circumvented within the present scope or inherent possibilities of the open method. Recurrence figures for the open method are a measure of the reporting surgeon rather than of the method; and the aspect of delayed healing should not be considered insoluble.

It is hoped that these suggestions will not only resolve in measure at least some perplexities of delayed healing but if observed will also improve the time element of the average case. I do not believe that the full potentialities of the open method are yet known or that final appraisal is even near at hand. The behavior of the healing open pilonidal wound and its clinical implications are of course not the whole story, and more remains before the final topic of judiciously suiting method to individual circumstances.

102 North Madison.

ABSTRACT OF DISCUSSION

Dr. Curtice Rosser, Dallas, Texas: I recently solicited the opinion of a group of proctologists who were in military service. Twenty-one, or 77.7 per cent of the 27 who replied, believe that in civilian practice an open type of operation is preferable and offers greater freedom from recurrence. A number of the replies express sympathy for some of the primary closure technics under specified rigid criteria. Since the open procedure has apparently survived, it becomes, in Blaisdell's words, essential that we consummate its full potentialities and in particular reduce to a minimum the morbidity which has been urged as the principal deterrent to its use. The late Franz Schmelkes called attention to the fact that tissue growth in culture mediums proceeds at an optimum rate in a high concentration of hydrogen ions. Since pathogenic bacteria produce acid in the tissue, an infected wound contains a low concentration of hydrogen ions, and in a clean healing wound it is usually about p_H 7.3. He believed it more than mere coincidence that some of the established agents used in wound therapy including Dakin's solution, zinc peroxide and chlorazodin are buffered to slightly above neutrality. It was for this reason that he suggested the use of sulfanilamide buffered with calcium carbonate, which received a thorough trial. A number of reports have discredited the use of antibiotics, among them that of C. H. O'Donnell and associates, whose clinical study indicated that sulfathiazole used locally in wounds does not prevent their infection because dead tissue and foreign bodies inhibit the action of sulfonamide drugs and because sulfathiazole leads to increased bleeding and hematoma formation, a factor known to predispose to infection. The first few days after surgical intervention are most important from the point of view of infection. The work of Berman and his associates indicated that a normal untraumatized wound becomes immune to contamination by bacteria four days after surgery, this wound immunity being limited anatomically to the area surrounded by granulation tissue. The onset of such immunity, however, is delayed by any type of trauma, even the removal of stitches. It is evident, therefore, that during the earlier days of healing a broad, open wound should be protected from bacterial contamination and any avoidable physical injury. After this immunity is established, infection ceases to be a serious consideration and the mechanical factors stressed by Dr. Blaisdell, including excessive granulation tissue, bridging and subcutaneous pocketing become important. In my own work I have effectively combated exuberant granulation tissue in the healing pilonidal wound by magnesium sulfate solution rather than curettage, and I believe that its favorable action is due to drying the wound by crystallization and osmosis, both of which draw water from the tissues.

Dr. Claude C. Tucker, Wichita, Kan.: Dr. Blaisdell has not only established principles of pilonidal surgery but in so doing has also clarified the principles of fistula surgery, which have more or less been actually used by proctologists alone or which, perhaps, they have never expressed in clear terms for others. Although the origin of each lesion is quite different, the after-care of both conditions is similar in that the experience that one has had in treating fistula will facilitate one's skill in treating the pilonidals, for the after-care in each condition is just as important as the surgical operation. It is the consensus that pilonidals are of embryologic origin and not of the preen gland, which is of sexual origin. The organism of the fistula incubates in an anal duct, which opens into the cyst of Morgagni. These ducts are preformed structures, sometimes extending between the internal and external sphincter muscle. Either pilonidal cysts or fistula can have offshoots extending out into surrounding tissue; therefore, it is quite important at the time of surgical intervention that all diseased tissue be removed and as much healthy tissue be conserved as possible. It is equally important that the internal opening be sought, found and dealt with in the proper manner. Bridges, as in Dr. Blaisdell's figures 1 and 6, show how easily one can overlook an original sinus going off to one side, thus requiring careful research with a probe. Delayed healing is one of the bugbears of pilonidal surgery. Those lesions limited to flat surfaces heal readily, while those which involve the intergluteal cleft are more complicated and require special attention—first of all, complete removal of any sinus involved. It is important that removed tissue be subjected to a pathologic examination.

Dr. L. D. McGuire, Omaha: Having performed 50 of these pilonidal operations by the closed method without any recurrence, I cannot see why the patient should be subjected to the added morbidity of the open method. One can saucerize the elliptical incision when one intends to use the closed method. The main thing is to be sure that the whole sinus tract has been removed. That is facilitated by first injecting with methylene blue or some similar liquid, and by a saucerized elliptical incision following clear down to the bone and including the small portion of the coccyx next to the tract. It is different from a fistula. In the fistula the tract is followed into the rectum, which is a contaminated area. From then on the wound is an infected one, and should therefore be kept open. But the pilonidal sinus, once completely removed, should be a clean wound. It should be treated as a clean wound. In that saucerized area, by undercutting the fat next to the fascia or even below the fascia, out on to the buttock on each side, the whole area can be shifted to the center, be brought into intimate contact and held in that position by a series of mattress sutures, the first portion of the suture going deeply and the latter portion of the suture just catching the edges of the wound; after all the stitches are placed, the whole can be brought together into a nice neat linear scar. The patient can be out of bed in two or three days and leave the hospital in five or six, and it has been my experience that you do not get recurrences in that type of closure. I do feel that the mechanics described by Dr. Blaisdell are perfect for the open wound. I disagree in that I do not think it should be left open.

Dr. Paul C. Blaisdell, Pasadena, Calif.: As stated in my paper, I do not care to bring up at this time the topic of the comparative values of the open and closed methods. Hence I shall not comment at length on the remarks of the last discussant, although appreciative of them. Probably the most comprehensive and significant figures in the literature today are those of Kleckner, whose article appeared about 1939 in the Transactions of the American Proctologic Society. He reported a series of over 4,000 cases operated on by members of the American Proctologic Society. As these statistics represent not the work of one man but the composite efforts of a representative group they are in my opinion still the most reliable statistics to date. I wish to emphasize only this one fact—that in those statistics the recurrence rate after the closed operation was twenty times that after the open method.

Special Article

HISTORY OF THE AMERICAN MEDICAL ASSOCIATION

MORRIS FISHBEIN, M.D.
Editor, Journal of the American Medical Association
and Hygeia, the Health Magazine
Chicago

(Concluded from page 849)

(NOTE.—*Following is the twenty-first chapter of a history of the American Medical Association, in process of development for publication in connection with the celebration of the Centennial of the American Medical Association in Atlantic City in June 1947.*

The general account of the history of the Association will be followed by individual histories of the various councils, bureaus, publications and other activities of the Association. The general account is written by the editor of THE JOURNAL. *Each of the other historical contributions will be by a member of the individual council, bureau or agency responsible and now associated with it or directly related to its work. Included will be photographs, signatures and a brief biography of each of the hundred presidents of the American Medical Association. This feature has been prepared by Dr. Walter L. Bierring.*

It will be impossible to publish all of the material in THE JOURNAL. *The complete work will be published in book form. It is hoped to have it available by the time of the annual session.*—ED.)

CHAPTER 21. *Changing Views of Sickness Insurance*

1920-1924

1920

NEW ORLEANS

By the end of 1919 correspondence began to reach THE JOURNAL opposing the reports that had been issued by the Council on Health and Public Instruction and by its subcommittee on social insurance. The writers charged that these reports were unscientific and more in the nature of propaganda for compulsory health insurance than scientific studies. Comparisons had revealed that many of the statements presented in the pamphlets published by the Council could be found in the propaganda issued by the American Association for Labor Legislation. Attack centered particularly on I. M. Rubinow, who had been secretary of the subcommittee on social insurance and who was responsible for most of the pamphlets. Circulation of the pamphlets was promptly discontinued. It was discovered, incidentally, that Dr. I. M. Rubinow was at the same time in the employ of the American Association for Labor Legislation.

HOSPITAL STUDIES

With much travail, early in 1920 a technic was developed for adding the listing of hospitals to the work of the Council on Medical Education. That task having been successfully accomplished, the function has been carried on continuously since that time.

THE BRAISTED ADDRESS

In his presidential address on Tuesday, April 27, at the New Orleans session, Admiral Braisted of the U. S. Navy read a presidential address which lasted a long time—variously estimated from one and a half to two and a half hours. In the minutes of the Board of Trustees appears a resolution that it is the sense of the Board of Trustees that no address at the opening meeting of the Scientific Assembly should exceed thirty minutes in its delivery. Physicians who were present when Admiral Braisted read his address reported that most of the assemblage listened carefully for the first thirty minutes but that members departed in increasing numbers, so that toward the end the hall presented vast areas of unoccupied seats. The address was titled "The Obligations of Medicine in Relation to General Education."

THE DIRECTORY REPORT SERVICE

At the suggestion of Mr. Will C. Braun and with the hearty cooperation of Dr. George H. Simmons, the American Medical Association in 1920 introduced its directory report service as a supplement to the directory. The reception of this report service by agencies requiring constant correction of mailing lists was so favorable that the report service has been continuous since that time.

PROHIBITION AND MEDICAL TECHNICIANS

Now for the first time also there came to the Board of Trustees two problems which were to be of great import in the ensuing years. The first was prohibition! The second was the fact that increasingly technicians were administering anesthetics and doing roentgen ray work and that laymen were conducting diagnostic laboratories.

Most of the early portion of 1920 was concerned with increasing costs of paper and labor and with the necessity of increasing the income of the Association by a rise in the price of THE JOURNAL.

THE NEW ORLEANS SESSION

The speaker of the House of Delegates, Dr. Hubert Work, had found some difficulties with the functioning of the Ad Interim Committee; he felt that its prescribed emergency duties might be delegated to the Board of Trustees or perhaps to the Executive Committee of the board. He urged compulsory military training. He pointed out that surgery was becoming dissociated from medicine and that it needed to be reoriented within the science of medicine; it seemed to him that the remedy lay with the American College of Surgeons.

The President of the Association, Dr. Alexander Lambert, spoke to the House of Delegates primarily on the growth and development of the hospital. There had been some resentment among the smaller hospitals to standardizing under the Council on Medical Education and Hospitals.

The report of the Board of Trustees called attention to the need of additional funds to carry on the activities of the organization and particularly to take up the new function of standardization of hospitals.

The Judicial Council had submitted a rewording of the Constitution and By-Laws, primarily with a view to clarity. For this most of the credit attaches to Dr. M. L. Harris of Chicago, chairman of the Judicial Council, whose legal mind was a great asset in such affairs.

SOCIAL INSURANCE

The Council on Health and Public Instruction was suffering from criticisms which had begun to appear in state medical journals, which felt that the Council should have taken a positive position against social insurance. The Council stated that it was not the business of the Council to formulate the policies of the Association. The Council felt, however, that its publications had certainly served to arouse the medical profession to a discussion of the subject.

NARCOTIC DRUGS

The control of narcotic drugs had become such a difficult problem that a special committee had represented the Association in a conference on the subject; its report occupies some ten pages of THE JOURNAL. This report condemned the ambulatory treatment of narcotic addiction, recommended that heroin be eliminated from all medicinal preparations and urged intensive action by the government to control narcotics.

A LAY MEDICAL JOURNAL

At the meeting of the House of Delegates in 1920 a resolution was offered to establish a lay medical journal. The House recommended postponement.

MORE SOCIAL INSURANCE

Several resolutions from New York condemned compulsory health insurance and any system which would provide for medical service to be rendered contributors or others provided, controlled or regulated by the federal or state government. These resolutions were supported by Illinois and Michigan.

ENDOCRINE PRODUCTS

For the first time there came a resolution demanding some sort of control over the sale of endocrine products.

The Ad Interim Committee, at the request of the Surgeon General, had tried to work out a technic for reconsideration of the medical service in World War I and leading toward the development of the Walter Reed Hospital as a medical education center.

SOCIAL SICKNESS INSURANCE CONDEMNED

When the Reference Committee on Hygiene and Public Health, headed by Dr. J. W. Schereschewsky of the U. S. Public Health Service, made its report, it submitted the following resolution, which was adopted:

> *Resolved*, That the American Medical Association declares its opposition to the institution of any plan embodying the system of compulsory contributory insurance against illness, or any other plan of compulsory insurance which provides for medical service to be rendered contributors or their dependents, provided, controlled or regulated by any state or the federal government.

That policy has remained the policy of the American Medical Association since 1920.

Significant of the elections held at the end of the 1920 session were the unanimous choice of Hubert Work, speaker of the House, as President and the election as the second speaker of the House of Dr. Dwight H. Murray of Syracuse, N. Y.; the latter had long been active in the affairs of the Association.

Again the Association adopted a resolution urging a national department of health.

WHISKY QUESTION LAID ON THE TABLE

Toward the end of the 1920 session a resolution came from the Council on Health and Public Instruction to the effect that the House of Delegates reaffirm a resolution adopted in 1917 that whisky is not necessary for the proper scientific treatment of influenza. This received a tremendous debate and ended by being laid on the table.

THE JOURNAL COSTS

In November a special session of the House of Delegates met to consider the problem of increasing costs in publication of THE JOURNAL. Statements were made by the editor and by Dr. Frank Billings as secretary of the Board of Trustees. Dr. C. J. Whalen, Illinois, and Dr. W. B. Small, Iowa, were the only two delegates opposed to raising the price of THE JOURNAL, and the action was carried overwhelmingly.

AND AGAIN THE LAY JOURNAL

Under the leadership of Dr. Wendell C. Phillips of New York a movement was begun to promote the establishment of a journal for the public in order to disseminate knowledge of scientific medicine and also to employ a field secretary who would carry on the extension of organizational work.

1921

BOSTON; THE CULTISTS' MENACE

Early in 1921 the rise of antivivisectionists, chiropractors, osteopaths and other nonmedical cultists began to give concern not only to the American Medical Association but to many of the foundations prominent in the field of public health. Arrangements were made for a dinner in New York City, attended by representatives of all these foundations, for a general consideration of the subject. It was felt inadvisable that there be any concerted action in this regard, although it was felt also that there ought to be some definite steps taken to enlighten the public regarding the menace of these cults.

In his first official address as speaker of the House of Delegates Dr. Dwight H. Murray of Syracuse urged particularly the establishment of a journal in the field of public health. He thought it possible that the Association might cooperate with the U. S. Public Health Service in such a publication. He believed that it might be possible to publish a periodical of this type as a Sunday magazine with the newspapers and to include questions and answers. He urged the appointment of field secretaries and a mechanism for presenting to the state medical societies the activities of the American Medical Association. His views were reenforced by similar statements from Dr. Hubert Work as President of the Association.

The report of the Board of Trustees gave much attention to the rehabilitation of veterans.

The Council on Health and Public Instruction had held a conference dealing with the provision of medical care particularly in rural areas. It recognized the need for more study and greater cooperation and requested authorization from the House of Delegates to call a national conference on the subject.

An extensive report dealt with the attitudes of the medical profession relative to narcotic drugs, and an even more extensive report concerned the building of hospitals for the indigent.

The Council on Medical Education and Hospitals was also much troubled by such problems as the training of specialists in contrast to the training of general practitioners, and the chairman of the Council was especially disturbed by what he called "outside interference with medical education." He said:

> I refer to the introduction of a scheme of organization of the faculties of our medical colleges which has been introduced by great educational foundations and by some of the state universities.

And particularly was he concerned with "the plan of all-time clinical instruction." He continued:

> This plan did not originate in the medical profession. It originated outside the medical profession, and unfortunately it has been forced on the situation largely by money. It is a subsidized plan which has been presented to universities with the statement that they would be given one or two millions of dollars or more, provided they would adopt the all-time clinical plan in their scheme of organization. To be sure, the originators of the plan have presented it as an experiment, but it has not been a fair experiment. A scientific experiment necessarily requires a control. There has been no control here. If, on the contrary, the great foundations would take three schools and give each of them two millions or five millions of dollars and put them on the all-time clinical plan, and another three schools of the same caliber and give each of them the same amount of money and allow them to develop under some plan which has been the outcome of the experience of medical educators the world over, the plan that one might refer to as the Trousseau plan, the Billroth plan, the Osler plan, a plan that has developed from the practical experience of medical educators, it would then be a fair experiment. So far the plan has been introduced at Johns Hopkins and Yale, at Washington University in St. Louis, and it has been adopted by the University of Chicago and by Columbia University. I believe also the new university of Rochester contemplates adopting it, and the plan in a somewhat modified way has been adopted by some of the state universities, notably the University of Michigan.

After this preliminary statement, the chairman said that he was opposed to state medicine but he recognized the necessity for organizing the delivery of medical service for wider distribution and lower costs. His report included this conclusion:

> There is special need that the medical profession develop some method by which the great possibilities of modern medicine, in the way of diagnosis, treatment and prevention of diseases, may be brought within the reach of all people. This function, it is believed, should be performed by the medical profession and not through any form of state medicine.

Under "New Business" came a group of resolutions on state medicine reaffirming the point of view previously adopted on this subject. The question was considered so fundamental to the future of the American Medical Association that it was considered by the entire House of Delegates as a committee of the whole. The reference committee suggested, as a substitute for all these resolutions:

> *Resolved,* By the House of Delegates of the American Medical Association, that it approves and endorses all activities and policies of states directed to the prevention of disease but opposes the state treatment of disease, except (*a*) in the institutional care of the delinquent, diseased and defective; (*b*) the treatment of those diseases whose treatment is essential to prevention; (*c*) the recognition and securing the correction of common defects of school children.

However, the committee of the whole made the following substitution, which was unanimously adopted:

> *Resolved,* By the House of Delegates of the American Medical Association that it approves and endorses all proper activities and policies of state and federal governments directed to the prevention of disease and the preservation of the public health.

A SECTION ON ANESTHESIA

Resolutions were offered requesting a section on anesthesia.

FULL TIME TEACHING

The reference committee on medical education refused to take a stand on the question of full time versus part time clinical teaching but suggested that experimentation should provide just as much funds in support of one as of the other.

THE LAY JOURNAL

A half dozen resolutions supported the proposal for a periodical in the field of public health, and the entire matter was referred to the Board of Trustees. Other proposals urged extension of the work of the field secretary as well as of full time paid secretaries for state medical societies.

STATE MEDICINE

Now for the first time came before the House of Delegates a definition of the term "state medicine." One of these, emanating from Dr. W. S. Rankin of North Carolina, included eight different types of legislation which had to do in any way with the relationship of the physician to the state. Another, exceedingly brief, came from a New York delegate, Dr. E. F. Delphey, which said succinctly:

> *Resolved,* That the term "State Medicine" be defined by this Association as the practice of medicine by the state by physicians on a salary to the exclusion of all other and individual practice of medicine.

Then came another definition by Dr. James F. Rooney of New York:

> *Resolved,* That the American Medical Association defines "State Medicine" to be any method providing for the practice of medicine under the direction, subsidy or control of the state or national government, excepting those functions having to do with preventive medicine and public health which do not involve the treatment of disease except that which is communicable.

The session of the American Medical Association on June 9, 1921 witnessed one of the peculiar personal attacks which has occurred at fairly frequent intervals in the House of Delegates—this time concerning one of the greatest leaders in the history of American medicine. The man involved was Dr. Frank Billings, and the attack on him was apparently led by Dr. E. H. Ochsner of Illinois. Through some means, not clearly defined, a circular quoting a statement alleged to have been made by Dr. Billings and published in the *American Labor Legislation Review* in 1917 was widely circulated in the House of Delegates. In this statement Dr. Billings was reported to have said that he was "unequivocally in favor of compulsory insurance and the protection of maternity." In 1921 Dr. Billings had published a statement recommending the growth of health centers, which were attacked in the circular as being "the shortest route possible to state medicine." Following this attack, Dr. Frank Billings addressed the House of Delegates. He told the circumstances under which the statement alleged was made and pointed out that it might have been an inaccurate report from a conference held in Washington in 1916. Dr. Billings said:

> Since that time I have declared in published articles that compulsory health insurance was not applicable to the United States, and that I am opposed to it, and that state medicine as related to the treatment of disease I look on in the same way.

Dr. Billings recognized that the attack made on him was in effect a charge of duplicity. He continued:

> I am charged before you and before the profession with writing articles and working for the legal enactment of compulsory health insurance and of state medicine in this country while saying to you and to the profession that I am opposed to it.

He referred to his career in the American Medical Association, including membership in the House of Delegates for eight years, the presidency of the Association and membership on the Board of Trustees since 1918. By unanimous vote the House expressed its confidence in Dr. Billings and referred the circular to the Judicial Council.

THE LAY JOURNAL

The Board of Trustees made a supplementary report that facilities to undertake and publish a health journal would be lacking until the completion of a new building, at which time it proposed to publish such a journal.

COMPOSITION OF THE HOUSE OF DELEGATES

An amendment to the Constitution provided for seating of the trustees and ex-presidents of the Association in the House of Delegates as ex officio members, without the right to vote.

SECRETARY OF HEALTH

Numerous resolutions brought in toward the end of the session dealing with general affairs of the Association were referred to the Board of Trustees, including one which insisted that health should not be submerged in a national department of public welfare but that it have a separate secretary in the cabinet.

ALCOHOL

Again the House of Delegates was concerned with alcohol. One resolution proposed that alcohol be considered a beverage detrimental to the human economy and that its use as a food, tonic or stimulant had no scientific basis and that the Association expressed its disapproval of the acceptance of a small minority of the profession of the position of being purveyors of alcoholic beverages. Another resolution condemned the promiscuous prescribing of alcohol.

The Ad Interim Committee of the Association addressed a message to the President of the United States approving his general attitude toward public welfare and his evident desire to coordinate interdepartmental activities and functions. The committee insisted, however, that there be medical direction in all divisions requiring medical knowledge.

1922

ST. LOUIS

So rapid was the growth of the Association that additions to its buildings had to be considered almost every second or third year. The continuously increasing publications demanded constant supervision, and almost every year the Board of Trustees was compelled to consider changes in the editorial boards because of losses by death or other untoward incident. The growth of the councils required also annual consideration as to changes in membership.

DR. OLIN WEST BECOMES FIELD SECRETARY

With 1922 the general manager, Dr. George H. Simmons, announced that the Board of Trustees, in pursuance of its wish to promote medical organization and medical economics, had secured Dr. Olin West of Nashville, Tenn., then secretary of the Tennessee State Medical Association, to serve as field secretary. He would report in April.

THE ALCOHOL REFERENDUM

So serious had become the debate as to the virtues of alcohol in the treatment of disease that the Board of Trustees had conducted a referendum on the value of alcohol. The Board decided to present to the House of Delegates an abstract of the results of this referendum and with it suggestions for modifications of the Volstead Act which would permit the physician who desired to do so to command a pure drug in the form of whisky or other distilled spirits at a price fixed by the government.

The Association had also conducted negotiations with the commissioner of the Bureau of Internal Revenue on the regulations controlling administration of the Harrison Narcotic Act, with a view to making its administration less onerous to the physician.

ADVERTISING OF COMMERCIAL LABORATORIES

The rise of the commercial clinical laboratories and of fly-by-night postgraduate courses was also giving concern to many agencies interested in standardization of medical science on a high level. It became necessary to adopt regulations governing the advertisements of such institutions.

THE POPULAR JOURNAL

At this time also came debates relative to the popular health bulletin or journal to be published by the Association. The members of the Council on Health and Public Instruction had been requested to submit in writing their concept of such a periodical and its editor, the method of distribution and the prices to be charged for an annual subscription. The opinions were as diverse as the membership itself. Three wanted a magazine that would look like the *National Geographic*. One insisted that the editor be a physician, while the next insisted that the editor be a layman, and still another that he be one experienced in welfare work. Indeed, one member inclined very strongly toward the welfare concept and conceived of a publication in which all national welfare organizations would conduct departments.

A LECTURE BUREAU

With the coming of the new field secretary, it was also proposed that there be established a lecture bureau under his charge and it was agreed that all officers and officials of the Association, as well as the members of the House of Delegates, make their services available to this lecture bureau and that the lecture bureau prepare a syllabus to guide speakers in their presentations.

AMERICAN MEDICAL ASSOCIATION BULLETIN

Next came the question of securing more practical cooperation between officers of county and state societies and the headquarters office. With this object in view, the Board requested the reestablishment of the AMERICAN MEDICAL ASSOCIATION BULLETIN, to be issued as often as once a month for nine months in the year under the editorship of the secretary of the Association and to be devoted wholly to questions of organization and economic, social and ethical questions pertaining to the practice of medicine.

In the meantime the Council on Medical Education and Hospitals was investigating group practice, and the opening of the Cornell Pay Clinic had aroused much disturbance in New York City, which in turn was reflected to the Board of Trustees.

ANNUAL REPORT OF THE BOARD OF TRUSTEES

By this time the work carried on by the Board of Trustees had become so profuse that nearly three hours was required at the meeting of the Executive

Committee of the Board of Trustees for the presentation and discussion of the report to be sent to the House of Delegates.

DR. GREEN RESIGNS

In April 1922 Dr. Frederick R. Green, who had served with the Association so long and in so many different capacities, resigned to become associated with Dr. John Dill Robertson of Chicago in the publication of a health magazine. This action caused some consternation, since he had been serving as secretary of the Council on Health and Public Instruction in a capacity which gave him intimate knowledge of the plans of the American Medical Association to publish a similar periodical. The periodical jointly produced by Drs. Robertson and Green suffered a short and financially disastrous career. The publication begun by the Association and eventually named HYGEIA had in 1947 reached its twenty-fifth year of existence.

At the meeting of the Board of Trustees previous to the St. Louis session there came a resolution from the Council on Health and Public Instruction which was to create much concern in ensuing years. It dealt with the prevention of conception and proposed that the American Medical Association take action to secure modification of federal laws which interfered with the right of the physician to give advice by mail on this subject. The Board of Trustees decided at that time that the question was one on which it could not take action.

THE TREASURER

At this meeting of the board Dr. William Allen Pusey, who had served with distinction as treasurer, resigned and was succeeded by Dr. Austin A. Hayden.

ST. LOUIS SESSION

When the House of Delegates convened in St. Louis in May the speaker of the House of Delegates, Dr. Frederick C. Warnshuis, made an address devoted to such topics as education of the public regarding scientific medicine, which discussion he concluded with numerous recommendations regarding the work of the Council on Health and Public Instruction. He discussed compulsory health insurance, asserting that it "never will and never can become an American institution." He considered the trained nurse and nursing problems and recommended that "our Association should assert itself in formulating an acceptable status for the trained nurse and the educational fundamentals requisite for her work of service." He proposed a semiannual meeting of the House of Delegates—a suggestion which was adopted in 1946. He concluded his address with a recommendation that all legislative activities of the American Medical Association be placed in the Council on Health and Public Instruction and that a legislative bureau be established in the headquarters office.

ADDRESS OF DR. WORK

The President of the Association, Dr. Hubert Work, followed with an address in which he pointed out the importance of close liaison between the American Medical Association and state societies. He felt that the councils should be increased in number and most of their work placed on the secretaries. Of organization, he said:

> Periodically the Association is criticized by one, or a small group of members, apparently actuated by destructive motives veiled by a demand for reorganization. The charges are usually built around the complaint that the Association is dictated by a few men in their own interests.

"Part of this statement is true," he said, and then he continued:

> This Association, and all others, even the national government, is directed by a few men for the principal reason that there is no other way to do it. That it is run in the interests of these few men is not true unless the expenditure of time, thought and money, with neglect of personal business, may be so construed. It has uniformly happened that those who have tried to break in, by first breaking down, have been members who have done nothing to build up.

On the subject of state medicine he made a few profound observations:

> The public is entitled to know the legitimate limitations of a state's participation in the practice of medicine. . . . Promiscuous medical treatment of disease . . . is not a state's function, and interference with it through any unit of government should not be tolerated by the public or by physicians. . . . The practice of medicine must remain a process of personal contact, invoking the patient's right of selection and the direct moral responsibility of the physician, with a sympathetic reaction between the two.

PRESIDENT-ELECT DE SCHWEINITZ

Dr. George E. de Schweinitz reviewed many of the activities of the agencies of the Association, showing a thorough knowledge of the work of the councils. He was much concerned that the views of individual members have opportunity for presentation to the House of Delegates, and he endorsed particularly the desirability of a semiannual session of the House.

BOARD OF TRUSTEES

In its report to the House of Delegates the Board of Trustees noted particularly the financial difficulties related to loss of income by many other periodicals and pointed out that during the period the financial condition of THE JOURNAL had been stable. The Spanish periodical was operated at a loss and also with a limited circulation. The QUARTERLY CUMULATIVE INDEX MEDICUS had met with instant favor. Most important, however, was the report on the construction of the new property.

The Board of Trustees recognized the existence of pay clinics, diagnostic clinics and group practice. The Council on Health and Public Instruction had recorded the existence of 139 group clinics and was making an attempt to determine the scope of their work.

The Judicial Council at this session also entered the arena with an extensive report on advertising medical institutions. The problem had reached them because of the existence of new institutes devoted wholly to the treatment of venereal diseases which were endeavoring to secure patients by advertisements in the press. The Judicial Council unhesitatingly condemned such institutions as being both unlawful, practicing as corporations, and unethical because of the nature of their practice.

The Council on Medical Education also paid its respects to so-called group practice and defined it as "the practice of medicine by an organization of physicians in which each member contributes to the group his professional service and receives from the group certain benefits in return and in which the members unite in the diagnosis of cases that indicate need for their combined service." The Council on Medical Education pointed out that less than 700 physicians in the United States were engaged in such practice and said

"It is notable also that a large number of 'group practices' are rather short lived. At present, therefore, the group practice movement does not seem to warrant any very great concern on the part of the profession."

The Council on Scientific Assembly refused to make any statement on the therapeutic value of alcohol and recommended that the House of Delegates take no action on such a question. As the floor was thrown open to the delegates for the introduction of new business, there came a half dozen resolutions on the prescribing of alcoholic liquors, a new definition of state medicine, and several proposals for changing the Constitution and By-Laws.

There was an attack on the Sheppard-Towner Maternal Welfare Act as a form of federal bureaucratic interference with the sacred rights of the American home. The House of Delegates adopted resolutions condemning the Sheppard-Towner law and also a resolution on the prescribing of alcohol. This resolution indicated that 51 per cent of physicians consider whisky necessary in the practice of medicine and recommended further that provision be made for supplying bonded whisky for medicinal use only at a fixed retail price to be established by the government.

When the reports of the officers were considered, the reference committee approved the establishment of a bulletin as the official journal of the House of Delegates, to be edited by the secretary of the Association, the field secretary and the speaker of the House. It approved a survey of clinics and group practice, approved enlargement of the Council on Health and Public Instruction and a survey of nursing institutions, but it could see no present need of regular semiannual sessions of the House of Delegates.

DEATH OF DR. J. N. MC CORMACK

A special committee had been established to draft a resolution on the death of Dr. J. N. McCormack. He had died on May 4, 1922, at the age of 75. Among other credit given to him was recognition of his magnificent efforts for the organization and reorganization of the American Medical Association and for the fine work that he had done in the state of Kentucky.

> For forty years he gave his time and labor by day and by night to protecting the people from disease and promoting the organization and efficiency of the medical profession.

OVERSPECIALIZATION

The House of Delegates recognized the need for more medical schools. It deplored the tendency toward premature or over rapid specialization. The relationships of the medical school to the university gave them great concern. The House of Delegates believed that it was especially important that teachers in the clinical departments retain their usual relationships to the medical profession.

GROUP CLINICS

To meet the rising threat of group clinics which would secure their patients by advertising in the public press, the Judicial Council had proposed an amendment to the Principles of Medical Ethics dealing with the solicitation of patients by physicians which has been a guiding principle in maintaining an ethical standard since its adoption. This section of the Principles of Medical Ethics merits repetition:

> Solicitation of patients by physicians as individuals, or collectively in groups by whatsoever name these be called, or by institutions or organizations, whether by circulars or advertisements, or by personal communications, is unprofessional. This does not prohibit ethical institutions from a legitimate advertisement of location, physical surroundings and special class—if any—of patients accommodated. It is equally unprofessional to procure patients by indirection through solicitors or agents of any kind, or by indirect advertisement, or by furnishing or inspiring newspaper or magazine comments concerning cases in which the physician has been or is concerned. All other like self laudations defy the traditions and lower the tone of any profession and so are intolerable. The most worthy and effective advertisement possible, even for a young physician, and specially with his brother physicians, is the establishment of a well merited reputation for professional ability and fidelity. This cannot be forced but must be the outcome of character and conduct. The publication or circulation of ordinary simple business cards, being a matter of personal taste or local custom, and sometimes of convenience, is not per se improper. As implied, it is unprofessional to disregard local customs and offend recognized ideals in publishing or circulating such cards.
>
> It is unprofessional to promote radical cures; to boast of cures and secret methods of treatment or remedies; to exhibit certificates of skill or of success in the treatment of diseases; or to employ any methods to gain the attention of the public for the purpose of obtaining patients.

WOMAN'S AUXILIARY

From Texas at this session of the House of Delegates came a request that the American Medical Association approve a movement to organize a Woman's Auxiliary to the American Medical Association.

> The object of this auxiliary shall be to extend the aims of the medical profession through the wives of doctors to the various women's organizations, which look to the advancement in health and education; also to assist in entertainment at all medical conventions and to promote acquaintanceship among doctors' families that closer professional fellowship may exist.

This came from the Woman's Auxiliary of the State Medical Association of Texas under the presidency of Mrs. S. C. Red. The House of Delegates approved the resolution. The Woman's Auxiliary thus created had grown by 1947 to a total membership of almost 30,000.

The House of Delegates also urged the Board to proceed as rapidly as possible with its publication of a journal for the public.

SECTION ON MISCELLANEOUS TOPICS

So many specialties had by this time begun to request sections in the Association that the Council on Scientific Assembly had evolved the idea of a special Section on Miscellaneous Topics which would be a tryout area for such new sections. Thus they could hold one or two meetings as the Section on Miscellaneous Topics and when sufficient interest was proved take on the full status of a section.

At this time also the name of the Section on Preventive Medicine and Public Health was changed to the Section on Preventive and Industrial Medicine and Public Health, indicating the new interest that was developing in the field of medical care in industry.

DEFINITION OF STATE MEDICINE

A new definition of state medicine was adopted with the following action:

> The American Medical Association hereby declares its opposition to all forms of "state medicine" because of the ultimate harm that would come to the public weal through such form of medical practice.
>
> "State medicine" is hereby defined for the purpose of this resolution to be any form of medical treatment, provided, conducted, controlled or subsidized by the federal or any state government, or municipality, excepting such service as is provided by the Army, Navy or Public Health Service and that which is necessary for the control of communicable diseases, the treatment of mental disease, the treatment of the indigent sick

and such other services as may be approved by and administered under the direction of or by a local county medical society and are not disapproved by the state medical society of which it is a component part.

DR. WILLIAM C. WOODWARD ADDED

The Board had agreed to accept as the first director of the Bureau of Legal Medicine and Legislation Dr. William C. Woodward, formerly health commissioner of Boston.

HYGEIA

The birth pangs of Hygeia, tentatively known as the people's medical magazine, were a matter of greater travail than was the birth of The Journal of the American Medical Association itself. There was, first, the question as to whether or not it ought to be published under the control of the Council on Health and Public Instruction or under the control of the Board of Trustees. Next came the question as to whether or not participation by the American Public Health Association should be authorized. Among others considered for the editorship was Dr. George Dock.

All the members of the Council had been queried as to their attitudes. Such eminent authorities as Dr. Edwin E. Slosson were consulted. Almost every physician, writer on science or public health official whose name had loomed large in the public prints was suggested as a possibility for the editorship.

AN OSTEOPATHIC CHALLENGE

About this time George A. Still, president of the American School of Osteopathy, proposed a challenge to the American Medical Association for a wager of $5,000. He suggested that a number of patients with pneumonia be selected whom the doctors would treat according to their methods and whom the osteopaths would treat by their technics. As with a football game, he proposed that any time an osteopath gave a drug of any sort it might count like an offside play or "clipping," and the osteopaths would be penalized, whereas the use of manipulations by the doctors would be counted as a penalty against them. "Packs," he suggested, "either as flannel jackets, antiphlogistine or any other physical pack will be allowable by either contestant." It was proposed that three unprejudiced laymen be the umpires. In reply Dr. Simmons called attention to the fact that he would not recommend trifling with human life in the manner proposed in order to determine a wager, and he noticed that the Associated Press had already received the communication of Dr. Still before it reached the American Medical Association office.

DR. VAUGHAN BECOMES AN EDITOR

By August it became apparent that the Board of Trustees had authorized Dr. Victor Vaughan to proceed with the publication of the popular medical magazine and had begun to solicit articles from a number of writers and to plan definitely for the publication.

THE FIELD SECRETARY

Dr. Olin West had begun as field secretary to visit the states needing help in organizational efforts. He had been preparing most of the material that was appearing in the American Medical Association Bulletin. Because of the resignation of Dr. Frederick R. Green, he had been serving also as acting secretary of the Council on Health and Public Instruction. The states had been queried as to their desires in relation to the work of the field secretary.

HYGEIA

By this time it had been determined to name the popular periodical Hygeia. Dr. Vaughan was endeavoring to work out a plan whereby Science Service would cooperate in the publication—a plan which incidentally came to naught. He was being greatly aided by Dr. Edwin E. Slosson with suggestions submitted in writing under the title "Fugitive Hints for Hygeia."

DEATH OF DR. CRAIG

In the period between the August and September meetings of the Board of Trustees Dr. Alexander Craig, secretary of the Association, died rather suddenly. In an attempt to secure a successor, the names of many leading physicians in the United States were considered, including the deans of most of the medical schools.

The new Bureau of Legal Medicine and Legislation was having most of its trouble with the laws regulating the prescribing of alcohol and narcotics and new laws dealing with antivivisection.

The travail of Hygeia continued. Great numbers of prospective editors were considered, including five or six army officers, three or four public health officials, two or three deans, one neuropsychiatrist and a few newspaper men. There were innumerable problems as to whether or not to purchase material, how the magazine could be circulated, whether or not it should be in color and similar questions.

AMERICAN RED CROSS

In the meantime meeting after meeting of the Board of Trustees and of the House of Delegates had been concerned with working out some sort of an arrangement with the American Red Cross which would clearly define the public health and medical functions of that agency. Through the intermediation of Dr. Hubert Work and Dr. George de Schweinitz with Judge Payne, a satisfactory agreement had been reached as to these functions. Recommendations had been made for a medical advisory committee, but at that time nothing serious was done. In fact, medical advisory committees to the American Red Cross were such in name only and without much in the nature of activity until Mr. Basil O'Connor was made national chairman of the Red Cross. He promptly appointed a competent medical advisory committee, which has been associated with him in the medical functions of the Red Cross since his appointment.

Dr. Olin West had been acting as secretary since the death of Dr. Craig, and it was agreed by the Board of Trustees at its last meeting for 1922 that he would be nominated by the Board to the position of secretary.

Special consideration was given to the establishment of Hygeia. By this time Dr. Victor C. Vaughan had determined to act at least temporarily as editor, and he agreed to serve with the understanding that the members of the Council on Health and Public Instruction would be the editorial board but that he should have the cooperation of Drs. Morris Fishbein and Arthur J. Cramp of the headquarters office in the work of editing the publication.

At this time also there came to the Board of Trustees the suggestion that there be a scientific exhibit for the public in connection with each annual session of the American Medical Association. This idea met with scant interest, however.

At the last meeting in 1922 also a proposal was made to provide group insurance for all the employees of the American Medical Association. The proposal went to the Board of Trustees for consideration, but some twenty years passed before this recommendation became effective.

1923

SAN FRANCISCO

With 1923 a reorganization of the Board of Trustees was considered desirable. The three year term and the election of three members annually permitted much instability in the conduct of the affairs of the Association. In the years 1907-1908 five new and inexperienced men were elected to membership on the Board in a period of twelve months. It was therefore recommended that the members of the Board of Trustees be elected to five year terms with a limitation of two terms to any member and that two trustees be elected each year. These recommendations were to be made to the House of Delegates and amendments to the Constitution and By-Laws submitted to make them effective.

At this time Dr. John M. Dodson was selected as secretary of the Council on Health and Public Instruction. Attempts were being made to find a new field secretary to take the place left vacant by the elevation of Dr. Olin West to secretary.

By this time the attempt to secure a secretary of health in the cabinet was again being actively revived. With the aid of Brig. Gen. C. E. Sawyer, who occupied the position of White House physician in the Harding administration, the proposal was being made that there be a single department of education and welfare. It was agreed that the importance of health in the picture be brought to the attention of the Brigadier General.

For some time the Association had been aiding in the reorganization of the Gorgas Memorial Institute in Panama. Now it reached the phase of a request by Dr. Franklin H. Martin to present the plan of reorganization to the House of Delegates.

In 1923 the Veterans Bureau appealed to have its physicians considered in the same relationship to the American Medical Association as were the physicians of the Army and Navy, with a representative in the House of Delegates.

When the Board of Trustees met previously to the annual session of the Association in San Francisco in 1923, several matters of great moment to American medicine came before it. Among the first was a recommendation that the Council on Health and Public Instruction be discontinued and that there be established in its place a bureau on Health and Public Instruction. The Board's attention was called to the fact that the functions on organization, legislation and medicolegal affairs had been distributed to other departments of the Association and that its health education function would be largely conducted through Hygeia. It was therefore suggested that the publication of Hygeia be placed wholly on the Board of Trustees and that the Council be discontinued. The suggestion met with instantaneous approval. The Board of Trustees agreed to formulate the necessary changes in the Constitution and the By-Laws to make this action effective. It was decided to present directly to the House of Delegates the other questions raised in the consideration.

Dr. Ray Lyman Wilbur had been elected President of the Association to succeed Dr. George E. de Schweinitz.

RESIGNATION OF DR. GEORGE H. SIMMONS

In 1923 at the San Francisco session Dr. George H. Simmons submitted his resignation after having served the Association for twenty-five years. He requested that there be no public announcement, so that the Board might have ample time to select a successor.

WARNSHUIS RECOMMENDS

When the House of Delegates met, the speaker of the House, Dr. Frederick C. Warnshuis, called attention to the death of Dr. Alexander Craig on Sept. 2, 1922. He repeated his recommendation for a semiannual session of the House of Delegates. He spoke at great length on the socialization of medicine. He thought it desirable that there be a large committee to consider the question of a national welfare department in the President's cabinet. He paid glowing tribute to the Board of Trustees, and he recommended that the Bulletin of the Association be discontinued and that sufficient space be allotted in The Journal for the necessary organizational material previously published in that periodical. He recommended, as had previous leaders of the Association, the appointment of at least some reference committees thirty days in advance of the annual session so that lengthy reports could be given adequate consideration before the session was held.

PRESIDENT DE SCHWEINITZ COMMENTS

Dr. George E. de Schweinitz paid gracious compliments to the editor and general manager, the Board of Trustees, the Council on Medical Education and Hospitals and other agencies of the Association. He urged that the duties of the President and President-Elect should be more strictly defined. He congratulated the Association particularly on its publication of Hygeia.

DR. WILBUR REMINDS

As President-Elect, Dr. Ray Lyman Wilbur urged the House of Delegates to remember that it was a legislative and not an administrative body. He felt that there should be more long term planning in the Association and that there should be more responsibility placed on the state organizations. Particularly did he urge that the Association participate in the great projects for Russian relief, which at that time were agitating our country.

THE BOARD PAYS TRIBUTE

Without calling to the attention of the House of Delegates the resignation of Dr. George H. Simmons, the Board of Trustees concluded its extensive report on the projects that have already been mentioned with an appreciation. It said:

> For a period of twenty-five years Dr. George H. Simmons has devoted his entire time and energy to service for the Association. The members of the Board are unanimously of the opinion that an expression of appreciation should be made to him at this time. As Editor and Manager, he has manifested remarkable literary ability, and it is due chiefly to his editorial

management that THE JOURNAL is recognized as the foremost general medical publication of the world, with a circulation at home and abroad of 80,000 copies weekly. He has shown rare and efficient administrative skill, which has won the respect and confidence of all the general officers, the members of the Board of Trustees, the members of the councils and committees, the personnel at headquarters, and the Fellows of the Association who have been fortunate enough to come in close contact with him. He has been honest, individually unselfish, loyal, and his efforts have been productive of the greatest service to the Association.

The Council on Health and Public Instruction, in what was to be its swan song, called attention to the various actions which it had taken during the year. It indicated that Dr. John M. Dodson, who had been appointed acting secretary of the Council, was also serving as editor-in-chief of HYGEIA.

BUREAU OF LEGAL MEDICINE

For the first time there came an extensive report of the Bureau of Legal Medicine and Legislation, read by Dr. William C. Woodward as executive secretary, to the House of Delegates at the request of the Board of Trustees. He concerned himself with the manner in which the Bureau had been created. He then discussed the National Prohibition Act and indicated that success had been secured in persuading the Commissioner of Internal Revenue to withdraw from warehouses spirits bottled in bond for medicinal purposes. He discussed the regulations of the Harrison Narcotic Act and the relationship of the Veterans Bureau to the training of chiropractors. The Sheppard-Towner Maternity Act had been enacted by the Congress, and the Bureau had been aiding the medical profession of the individual states where opposition to the act was being developed. That act was before the Supreme Court of the United States for the determination of its constitutionality. He outlined in detail the attempt of Brig. Gen. C. E. Sawyer to develop a national department of education and welfare with the hope that it would be known as the Department of Education, Health and Welfare. This matter in 1947 is still before the Congress, the latest legislation calling for the establishment of a Department of Health, Education and Security. The remainder of his presentation was concerned with legislation in the individual states and with the difficulty of animal experimentation.

The House of Delegates approved the recommendation for the change in the manner of electing trustees, but since this required an amendment to the Constitution, it had to lie over for another year.

THE GORGAS MEMORIAL

In accordance with previous arrangements, Dr. Franklin H. Martin discussed at length the work of the Gorgas Memorial, and the House of Delegates by a rising vote pledged the American Medical Association to do everything in its power to assist the Committee on Gorgas Memorial to erect the building.

PRESCRIBING LIQUOR

Following the action of the Commissioner of Internal Revenue in relation to providing whisky bottled in bond for prescription purposes, a resolution was introduced commending the Association for the Protection of Constitutional Rights, for its public spirited efforts in securing this action; also a resolution that in the judgment of the House of Delegates of the American Medical Association every state and county medical association should use its best endeavors to discipline physicians who were negligently or wilfully prescribing liquor otherwise than in accordance with the law and to purge the medical profession of physicans who wilfully under the cloak of their profession prescribe liquor for other than medicinal purposes.

There was the usual resolution condemning the Volstead Act for interfering with doctors in their practice.

There was an appeal to establish the Section on Radiology.

There was a spirited election in which Dr. William Allen Pusey was elected President over Dr. William D. Haggard by a vote of 66 to 62.

THE EAGLETON RESOLUTION

On the closing day of the session came a resolution from the State Medical Society of New Jersey, under the leadership of its president, Dr. Wells P. Eagleton, requesting the Board of Trustees to disassociate the editorship and general management of the Association, placing the editorship entirely separate from the general management. This communication was referred to the Board of Trustees without objection. The story behind this action is interesting; it may now be told since the two chief characters in the drama are no longer among the living. Dr. Wells P. Eagleton had published a book on the subject of brain abscesses and had requested that the advertisement of that book appear on the front cover of THE JOURNAL. Dr. George H. Simmons had called to his attention the fact that the front cover had been sold under contract to another publisher and that it was not possible to invalidate the contract in order to permit the advertisement of Dr. Eagleton's book. Dr. Eagleton took violent exception to this decision, asserting that the rights of a Fellow of the Association should have precedence over any commercial interest whatever. In proposing the action of the State Medical Society of New Jersey before the House of Delegates, he insisted that THE JOURNAL represent solely the scientific and ethical side of the American Medical Association. He said:

> The editor should devote his entire time to the scientific and ethical aspects of the profession, not to its business.

This step initiated by Dr. Eagleton was to have repercussions for years to come. In 1924 the work of the editor was separated from the activities of the general manager.

ARCHIVES OF OTOLARYNGOLOGY

Following the meeting of the House of Delegates came a proposal for the publication of a journal on otolaryngology, and the Board of Trustees agreed to undertake such a publication.

HYGEIA

In the meantime the Board of Trustees continued to search for an editor for HYGEIA. The editors of leading women's magazines were consulted, and six additional candidates were proposed. Dr. Simmons was convinced that the matter should not be too hastily acted on. He agreed to interview the candidates to aid in making a decision.

LEGAL PROBLEMS

At this time the Bureau of Legal Medicine was conducting discussions with the Commissioner of Internal Revenue relative to the right of a physician to deduct from his income tax expenses incurred in attending medical society meetings. There was also the question as to the right of the Commissioner of Internal

Revenue to search private professional records under the guise of efforts to collect the federal estate tax from the estates of the physician's deceased patients.

THE ADVERTISING COMMITTEE

In order to conduct more formally the decisions on advertising submitted to THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION the Board of Trustees had established in the headquarters office an Advertising Committee consisting of Drs. Arthur J. Cramp, Olin West and Morris Fishbein, Professor W. A. Puckner and Mr. C. H. Mohler of the advertising department. Since that time an Advertising Committee of this type has been a regular feature of the conduct of the headquarters office, the purpose being to give scientific consideration to all advertisements that are not directly within the province of the Council on Pharmacy and Chemistry, the Council on Foods and Nutrition, the Council on Physical Medicine and the Council on Medical Education and Hospitals. Indeed the Board of Trustees had authorized the Advertising Committee to reject any advertisements on evidence that a firm was not dealing in complete good faith in its actions toward the medical profession. It was emphasized particularly that all the advertising copy of a manufacturer, as well as the advertisements offered to THE JOURNAL, must meet the standards. In accordance with this action it was recommended also by Dr. Simmons that the publications of the American Medical Association support the councils by refusing to publish manuscripts which promoted the use of nonaccepted products. While this action was not made official, it has guided the decisions of the editorial boards in many instances and thus has saved the medical profession from exploitation by manufacturers who were launching untested and untried remedies on the medical profession.

The Board of Trustees was continually concerned with many matters of minor importance to the general progress but which nevertheless had tremendous interest for the health of the American people. It was attempting to secure improvement in the medical service rendered to Indians under the charge of the Secretary of the Interior. It was working with manufacturers as well as with legislators in an endeavor to prevent distribution of lye and other caustic substances without adequate warning labels. It was endeavoring to secure standardization of thermometers and other apparatus used in the practice of medicine. It was holding continual conferences with Director Frank T. Hines of the Veterans Bureau in an endeavor to limit the training of charlatans under the auspices of the Veterans Bureau and to improve the quality of medical service rendered to the veteran himself.

An assistant editor had been secured for HYGEIA. Attempts were being made to secure suitable field secretaries and assistant secretaries, workers in the field of organizations and for many other functions. At the same time the property of the Association was gradually assuming form. An assembly hall had been added to the plans; new presses and much new equipment were being purchased.

MIDDLESEX MEDICAL COLLEGE

In November 1923 the Middlesex College of Medicine and Surgery notified the Board of Trustees of the American Medical Association that it would not permit the Council on Medical Education and Hospitals to make further inspection of the institution and threatened suit for damages should any reference be made to it in the classification of medical schools published in THE JOURNAL. The Middlesex College of Medicine and Surgery continued to be an irritant in the attempt to secure a high standard of medical education until it finally ceased existence by action of the courts of Massachusetts in 1945.

President Harding died toward the end of the year. President Ray Lyman Wilbur of the American Medical Association had been among the physicians who were in attendance at the time of his passing. The press of the nation had intimated that the death was not wholly due to natural causes. As the years have passed it has become more and more apparent that President Harding died of coronary thrombosis, related no doubt to the strenuous existence that he had followed in a country recuperating with great difficulty from a great war and from mental and other stresses too numerous to mention.

As a result of innumerable conferences with Director Hines of the Veterans Bureau, the American Medical Association had been requested to develop a committee to review ratings for disabilities. This was one of the most important functions rendered by the American Medical Association in the postwar period.

In the meantime the American Medical Association through THE JOURNAL had aided in exposing diploma mills in St. Louis and Connecticut and rackets operated by electic licensing boards in many states. These crusading activities were vastly important in relation to the public attitude toward the American Medical Association.

1924

CHICAGO; DR. SIMMONS RETIRES

When the Executive Committee met early in January in 1924 Dr. Morris Fishbein, assistant to Dr. Simmons, reported a series of interviews with leading editors in New York City as to the prospects for HYGEIA and indicated other measures that had been taken to extend publicity for the American Medical Association in many ways. Articles had been arranged for publication in the *Woman's World;* contact had been made with *Time* magazine, which then had a circulation of 60,000 weekly, relative to the publication of medical news; columns were to be published by the North American Newspaper Alliance, and in other ways publicity for American medicine was to be issued through various channels.

The Bureau of Legal Medicine, through Dr. William C. Woodward, had made contacts with many organizations of the government, and full reports of these were made to the Board of Trustees. They covered such subjects as income taxes, narcotic laws, patents on nostrums, the care of the Indians, animal experimentation, legislation on lye and the standardization of thermometers.

The Board of Trustees was watching carefully the progress of its numerous special periodicals. It recommended expansion of the AMERICAN JOURNAL OF DISEASES OF CHILDREN so that it would contain not only original articles but also abstracts of articles from other periodicals, news and related material.

The Board agreed early in the year that on retirement Dr. Simmons should be known as the emeritus editor of THE JOURNAL.

By this time the functions of the Association in relation to exhibits were assuming increased prominence.

It was being recommended that a Bureau of Exhibits be established with a competent director. Much attention was being given to the formulation of outlines for periodic health examinations. The idea of such examinations was being spread throughout the country by propaganda from many agencies.

Hygeia had reached 18,000 circulation. Many excellent articles were beginning to be selected. Hygeia was being widely quoted in the press and in other periodicals, having an influence far beyond its circulation. Moreover the material in Hygeia was becoming available as reprints and pamphlets, which were extending the circulation to a much more extensive audience.

Then came the epoch making meeting of the Association in Chicago in June.

Professor Puckner, secretary of the Council on Pharmacy and Chemistry, was beginning to feel his advancing years, and Dr. Paul Nicholas Leech was made director of the laboratory.

The Board agreed to anounce to the House of Delegates the resignation of the editor. At this time the Board of Trustees recognized the necessity for taking immediate action for the conduct of the affairs of the Association following the retirement of Dr. Simmons. The names of several applicants were considered. The board eventually agreed that on the retirement of Dr. Simmons Dr. Olin West should become acting general manager, Dr. Morris Fishbein acting editor of The Journal and Mr. Will C. Braun acting business manager, with the understanding that final decisions would be made at a later date.

THE CHICAGO SESSION

The House of Delegates convened for the first time in the Assembly Hall of the American Medical Association building in Chicago. Dr. Frederick C. Warnshuis devoted the first portion of his address to the working methods of the House of Delegates. He recommended that the privileges of the floor of the House be granted to the secretaries of councils and bureau heads for brief reports on their own work, so that the House of Delegates might be more familiar with the men who were carrying on the activities of the Association.

Dr. William Allen Pusey, as President-Elect, discussed particularly the high costs of nurse and medical training and the problem of supplying adequate medical services in rural districts. His address was long and involved essentially a recommendation for abbreviation in the length of the medical and nursing curriculums with the idea of granting the medical degree within four to five years after leaving high school.

The great length of the report of the Board of Trustees made the House of Delegates impatient; it voted to dispense with reading the report and that instead the responsible officials present them an abstract calling attention to the important features. This met with instant approval from the House and has been followed continuously since that time.

SECTARIAN PRACTICE

The Judicial Council had been asked to define "sectarian practice" and to define also the term "physician." These definitions follow:

> A "sectarian," as applied to medicine, is one who in his practice follows a dogma, tenet or principle based on the authority of its promulgator to the exclusion of demonstration and experience.
>
> A physician is one who has acquired a contemporary education in the fundamental and special sciences, comprehended in the general term "medicine" used in its unrestricted sense, and who has received the degree of Doctor of Medicine from a medical school of recognized standing.

Then came a consideration of the relationships of physicians to cultists—a question which has been raised repeatedly and which, it will be remembered, was the fundamental difficulty that arose in New York and caused for a while two medical societies in that state. The report of the Judicial Council on the relationships of physicians and cultists also bears republication:

> Several communications addressed to the Council have raised various questions as to the relationships of physicians with cultists—the attitude that should be assumed by the physician called into a case under treatment by a cult practitioner, whether a pathologist in a hospital under the direction of regular physicians should refuse to examine material submitted by a cultist, and other questions of more or less similar nature. In the opinion of the Judicial Council, these are questions that are not sharply to be defined by words. In his relations with irregular practitioners, the physician should be bound by the Principles of Medical Ethics, chapter II, article I, section 1, while bearing in mind the considerations set forth in sections 6 and 7 of the same chapter and article, and with due consideration for the observations made in the Conclusion on page 23 of the Principles of Medical Ethics of the American Medical Association. In such matters the policy must be governed largely by the circumstances governing the individual case; by the conditions existing in the special community; and by the realization that the first duties of the physician are the care of the sick and, at the same time, the upholding of the dignity and honor of the profession.

At this time also came before the Judicial Council the question of prescribing of eyeglasses with rebates to the ophthalmologist. The Judicial Council referred this to the Section on Ophthalmology for consideration and a request for a recommendation on the subject. Among the most important of the statements made by the Judicial Council also was a supplementary report at this session of the American Medical Association dealing with the vending of the physician's services through an intermediate agency, such as the Public Health Institute in Chicago and the Life Extension Institute, at that time established in New York. So significant was this report that the House of Delegates decided to consider it as a special order of business at a later session.

In its report to the House of Delegates the Council on Medical Education called attention to the diploma mill scandal which had shocked the nation. Several low grade medical schools had sold diplomas and had then shipped their graduates across the country to Connecticut, where the Connecticut eclectic licensing board had arranged for licensure. The situation had been called to public attention by the publication in The Journal of the American Medical Association of the statistics of state board examinations. This had caused the authorities in Connecticut to make an investigation, which resulted in revoking the licenses of 56 physicians and shortly thereafter of another 111, so that 167 physicians in all were declared to have been illegally registered by the eclectic board in that state. Subsequently some of these physicians used their Connecticut licensure to obtain licensure in Arkansas and in Kansas—among them the notorious John R. Brinkley, who at a later date sued the American Medical Association for libel. The Council on Medical Education and Hospitals called attention to the fact that the institutions which were declared to have been involved in the sale of diplomas had long since been in the Council's lowest classification. They were of such low grade that their diplomas were not recognized by the licensing boards of over forty states. Even if those who purchased diplomas had actually matriculated in and attended these medical schools for the required four years and had been regularly graduated, they could not have obtained licenses in more than a few states. That is why the diploma mill ring had to send their "graduates" half way across the continent to get them licensed. Slowly but surely the work of the Council on Medical Education was closing and narrowing the area in which an incompetent physician could attempt to serve the public.

By this time so much interest had developed in anesthesia, radiology and physical medicine that the Council on Scientific Assembly had offered special sessions to these specialties so that they might prove their worth before receiving a section in the American Medical Association.

When a call for new business was made in the House of Delegates, resolutions poured in on the control of cosmetics, on publicity for institutions, on prohibition, on standard methods for reporting deaths in the puerperal state, on the use of zinc stearate dusting powder and on the prescribing of liquor. Again Dr. Franklin Martin addressed the House in behalf of the Gorgas Memorial Institute. At this session the new methods of electing trustees were approved and became a part of the Constitution of the Association. Again the Association appealed for better regulation of the prescribing of liquors.

THE FUTURE OF MEDICAL PRACTICE

Dr. Ray Lyman Wilbur, who had been detained so that he could not make an address at the opening meeting of the House of Delegates, attended the second session and addressed the House on the subject of the future of the medical profession. He pointed out that one of the greatest advantages in the United States is the fact that we have forty-eight states so that any state can try an experiment, and, if it is a bad one, it alone suffers. He recommended more experimentation by the medical profession in methods of preventive medicine and medical care. He said:

> It seems to me, too, that we must keep individualism in medicine if it is to advance, and we must keep individual relations between patients and physicians if medicine as an art is to go forward. The minute we allow a bureaucracy to step in between the physician and the patient, it seems to me we have taken the one step that will degrade our profession and that will put us so that we cannot render ideal professional services to patients.

He felt that too much standardization was injurious to medical advancement. As to service to patients in rural areas, he said:

> Now, to me the rural practitioner problem is not one that we can solve. It is a great social question, this transfer of people from the farms to the cities; it comes with more machinery, with better roads, with gasoline and all that sort of thing, with the changed attitudes of people, with the desire to get more education for the children, and so on. If you will study the population curves, you will see that people are going into the cities from the country, and right now we are having an overproduction on the part of the farms; that to me can be solved only by a million or more farmers moving into the city and going into industry, because we have overproduction on the farms.

In considering the report of the Judicial Council, the House of Delegates adopted the principle that "under no circumstances should a regular physician engage in consultation with a cultist of any description."

As to the practice of medicine by corporations, the House of Delegates, sitting as a committee of the whole, said that the practice should be condemned as against the best interests of the public and that every agency of the Association should do its utmost to educate the people as to the desirability of periodic physical examinations. The Association decided to prepare a special manual to aid physicians in this work.

Dr. William D. Haggard was elected President of the American Medical Association. When the time came for the election of trustees, there was evidence of the manner in which a witticism can swing a legislative body. A distinguished pathologist was nominated for trustee, and a general practitioner was nominated as the opposing candidate. In speaking in behalf of the general practitioner, one of the speakers said "The American Medical Association is not dead, and it does not need a pathologist." There was a tremendous burst of laughter, with an overwhelming vote for the general practitioner.

The House of Delegates at this time referred to the Board of Trustees the ultimate decision on the division of the work of the editor and general manager, and on the concluding day of the session the Board of Trustees announced the action that it had already taken relative to the appointment of Dr. Olin West, Dr. Morris Fishbein and Mr. Will C. Braun.

At the September meeting of the Board Dr. Simmons announced that he was about to leave, and he made a report to the Board of Trustees covering the status of several projects which required action.

The Association was in excellent financial condition. All of its publications were doing well. Dr. Simmons called attention to the fact that the American Medical Association was now in process of developing a package library service, in addition to lending foreign periodicals and furnishing references to literature on various subjects. These services had done much to make available to physicians in remote areas the latest advances in medical science.

SELECTION OF NEW FULL TIME STAFF

At the end of the meeting in September the members of the Board of Trustees appointed a special committee, consisting of Drs. D. Chester Brown, A. R. Mitchell and Charles W. Richardson, to interview candidates for the office of general manager and editor, and the members of the Board were requested to look for available candidates. Dr. Simmons before leaving had prepared an outline of the duties that should be assigned respectively to the general manager, the business manager and the editor.

At this time a considerable disagreement developed between Dr. William Allen Pusey and the Council on Medical Education and Hospitals. Dr. Pusey, as President of the Association, had spoken in behalf of a shortening of the medical curriculum with a view to educating many more physicians and thus supplying the needs of rural areas.

Hygeia had reached an annual circulation of 25,000.

At the November meeting of the Board of Trustees, after much discussion of many of the pending affairs, the Board met in executive session to consider the appointment of a general manager, an editor and a business manager. The minutes merely record that the board met at 8:30 in the evening and that the discussions were long and arduous. After a session which lasted until dawn, the board adjourned. The minutes state only that the subcommittee appointed to procure names of available men from whom a general manager might be selected presented its report. When the Board reconvened in the morning at 9:30 it was moved that Dr. Olin West be elected general manager. This was seconded and carried. The Board then considered the finances of the Association, after which it was moved by Dr. A. R. Mitchell that Dr. Morris Fishbein be appointed editor of The Journal, his duties to be those outlined at the time of his election as acting editor. Then it was moved by Dr. Mitchell that Mr. Will C. Braun be made business manager. These officials were called before the Board and notified of their appointments.

Clinical Notes, Suggestions and New Instruments

CANCER OF THE CERVIX

A Local Recurrence Eighteen Years After Radium Therapy

E. EUGENE COVINGTON, M.D.
Baltimore

I have worked in a tumor clinic for sixteen years, have personally treated several hundred cancers of the cervix in private practice, have had about the average number of local recurrences, almost all of which were within five years, and have seen numerous examples of late metastases; but the following case report of a local recurrence of a squamous cell cancer of the cervix eighteen years after radium therapy is so unusual that I consider it best to record it in the literature. I have never seen a local recurrence this late after any squamous cell cancer, i. e., lip, skin, larynx, pharynx, bladder, tongue or cervix, regardless of whether it was treated by surgical excision or irradiation. Also, I have never seen a new cancer develop in a cervix which had been previously treated by radium.

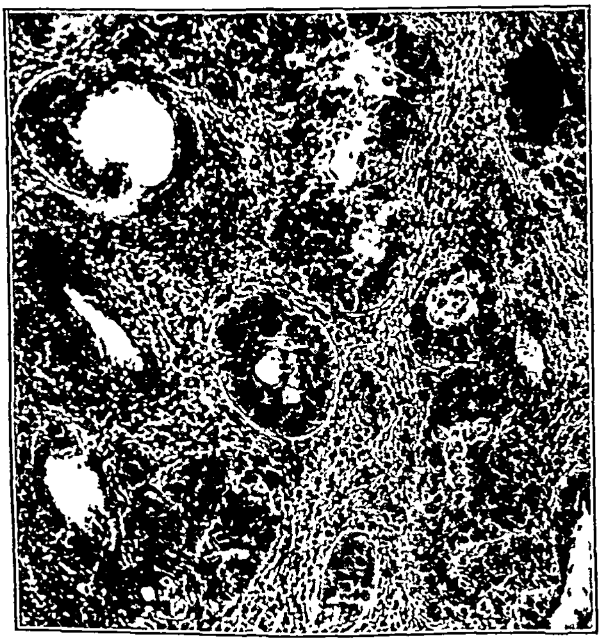

Fig. 1.—Low power photomicrograph of the cancer of the cervix before radium treatment (1929). It is a typical squamous cell cancer with rapidly growing cells and numerous mitotic figures. Note the decided amount of secondary infection.

After a fairly extensive review of the literature on cervical cancer the records of several pathologists and gynecologists of Baltimore hospitals, including the Department of Pathology, University of Maryland School of Medicine,[1] and the extensive surgical pathology records of the late Dr. J. C. Bloodgood[2] were reviewed, and there was no case report of such a late local recurrence and no record of a new cancer developing in a previously irradiated cervix. The opinions of the gynecologists and pathologists varied in this case; most men thought it was a local recurrence of the original growth, but some thought it was a new cancer developing in a previously irradiated cervix.

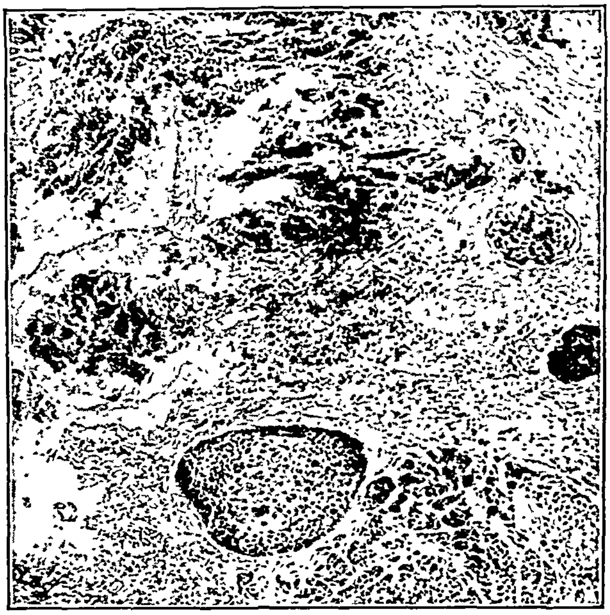

Fig. 2.—Low power photomicrograph of a local recurrence of cancer of the cervix eighteen years after radium therapy. Note the slower growing cancer cells, the absence of infection and the pronounced amount of radiation fibrosis.

REPORT OF A CASE

A white woman aged 41, with a history of two normal pregnancies, entered St. Joseph's Hospital Jan. 25, 1929 with the complaint of vaginal bleeding of six months' duration. Bimanual examination revealed a large, ulcerative type growth of the cervix, filling most of the vault of the vagina. The cervix was almost entirely obliterated by tumor and fixed to the parametrium, but there were no palpable masses in the parametrium. A moderately severe secondary infection was present (fig. 1). The impression, proved by a biopsy (fig. 1), was squamous cell cancer of the cervix, clinically stage 4.

Three applications of radium (Jan. 25, Feb. 10 and Feb. 12, 1929) for a total dose of 5,000 mg. hours of radium were given by Dr. C. R. Edwards, Baltimore. He followed the case for five years, at which time the patient was clinically well and showed no evidence of the growth on vaginal examination.

On Sept. 11, 1946, almost eighteen years after the three radium treatments, the same patient entered St. Joseph's Hospital because of vaginal bleeding and lower abdominal pains of two months' duration. Bimanual examination revealed a growth in the cervix, ulcerative in type and fixed to the adnexa, but no palpable masses were found in the parametrium. A moderate amount of radiation fibrosis of the vagina, parametrium and wall of the rectum with mild stricture formation were also observed on examination. The general condition of the patient was good, and there was no evidence of metastases. The growth was classified clinically as stage 3 cancer of the cervix. A biopsy showed squamous cell cancer (fig. 2).

The treatment was as follows: 2,000 r of 400 kilovolt roentgen therapy over each of four pelvic areas (two anterior and two posterior) was given over a period of four weeks, using

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From the Department of Radiology, St. Joseph's Hospital.

[1] Quoted by permission of Dr. Hugh Spencer, professor of pathology, University of Maryland School of Medicine.

[2] Quoted by permission of Drs. George A. Stewart and L. C. Cohn, associates of the late Dr. J. C. Bloodgood.

a heavy Thoreus filter and 50 cm. distance. This was followed immediately by an application of intrauterine and contracervical radium (3,600 mg. hours of radium).

At the present time (two months after treatment) the general condition of the patient is good, the local growth has entirely disappeared, there is no evidence of metastases and the bleeding and discharge have stopped; the patient's only complaint is mild diarrhea and rectal pain from irradiation proctitis and a slight stricture of the rectum.

SUMMARY

A local recurrence of a squamous cell cancer of the cervix eighteen years after radium therapy is reported and, as far as I can determine from the literature, this case represents the longest interval of time on record before such a local recurrence of a squamous cell cancer of the cervix.

Council on Physical Medicine

The Council on Physical Medicine has authorized publication of the following report. Howard A. Carter, *Secretary.*

ABSTRACT OF MINUTES OF MEETING OF THE COUNCIL ON PHYSICAL MEDICINE, DEC. 13 AND 14, 1946

The Council on Physical Medicine held its regular annual meeting on Friday and Saturday, Dec. 13 and 14, 1946. Those present were Drs. Morris A. Bowie, Eben J. Carey, Anthony C. Cipollaro, W. W. Coblentz, John S. Coulter, A. U. Desjardins, W. E. Garrey, Frank H. Krusen, Frank R. Ober, George M. Piersol and H. B. Williams.

Dr. John S. Coulter was reappointed chairman and Dr. Frank H. Krusen, vice chairman. On Thursday, December 12, preceding the meeting of the Council, a joint meeting was held with the Council on Industrial Health, the Consultants on Roentgen Rays and Radium and the Consultants on Atomic Energy. Those present were Drs. William E. Chamberlain, Arthur C. Christie, Edwin C. Ernst, Gioacchino Failla, Hymer L. Friedell, Raymond Hussey, Anthony J. Lanza, Robert R. Newell, Eugene Pendergrass, Carl M. Peterson, Ursus V. Portmann, Stanley J. Seeger, J. L. Weatherwax and Harold O. Wyckoff.

Reviewing the work of this joint meeting, the Council on Physical Medicine decided that the problems under consideration were of particular interest to the Council on Industrial Health and to both groups of consultants and concluded that it would be extremely difficult to separate the two fields. The plan of merging the work of the two groups of consultants into one with a common name was discussed but abandoned. The Council finally decided, in view of the general interest of the profession in radioactive isotopes and atomic energy, that a special group of consultants be retained. The Secretary was advised to present all matters dealing in the field of roentgen rays and radium and radioactive isotopes to both consultant groups.

Dr. Robert R. Newell was appointed a member and chairman of the Consulants on the Medical Aspects of Atomic Energy. Dr. A. U. Desjardins, member of the Council, was appointed chairman of the Consultants on Roentgen Rays and Radium.

The Council confirmed the action of the consultants (1) to appoint a subcommittee to study problems arising in the fields of radon and thorium-X; (2) to appoint a subcommittee on nomenclature for selecting terms used specifically in roentgen rays, radium and radioactive isotopes and to cooperate with the American Standards Association and with other national bodies dealing with fundamental definitions; (3) to gather all available information regarding isotopes and prepare an article for publication in The Journal; (4) to prepare a statement on the danger of radiant energy; (5) to study methods of guarding against injury to employees in industrial plants where radioactive isotopes are manufactured, and (6) to advise physicians on the dangers associated with the use of radioactive isotopes as tracers in diagnostic procedure.

Dr. George M. Piersol reported on the progress made in the investigation of clinical thermometers. The Council appointed a group of specialists to advise him in the survey.

The problems relative to ultraviolet radiation for disinfecting purposes were discussed. The Council voted to reaffirm its stand—that is, to accept ultraviolet lamps only for use in operating rooms, baby cubicles and nurseries in hospitals. Furthermore, the Council voted that advertising for disinfecting lamps be not accepted or the lamps retained on the accepted list if they are recommended for installation in school rooms, theaters, manufacturing establishments, business offices, refrigerators, sterilizers and poultry and animal husbandry establishments.

In the opinion of the Council, critical evidence is not available at the present time to substantiate the claims made but the members of the Council pointed out that careful consideration will be given to any new evidence that comes to light.

The Council voted to reaffirm its adopted report "Therapeutic Value of Ultraviolet Radiation," in which the therapeutic indications and contraindications of ultraviolet radiation are considered and voted to reaffirm its adopted report "Medical Diathermy." The "Tentative Minimum Requirements for Acceptance of Diathermy Apparatus" were revised, and the Council voted to authorize its Secretary to refer the requirements to the manufacturers for comment and criticism before being published.

The Council discussed its work in the fields of occupational therapy, education, ophthalmology and audiometers and hearing aids.

The members were informed that the Board of Trustees had voted to refer the activities of the Committee on American Health Resorts to the Council on Physical Medicine. The inspection of health resorts will be done in the future as in the past by the Council on Medical Education and Hospitals.

An exhibit at the one hundredth annual session of the American Medical Association in June was proposed. This exhibit will be separate from the special exhibit on physical medicine supported by the Board of Trustees. The Council was gratified to learn that a session on physical medicine has been established by the House of Delegates. At least one afternoon at the next annual session will be devoted to the problems of physical medicine.

For many years the Council has steadfastly refused to recognize the term "iron lung" as a synonym for respirator. Popular usage of the term "iron lung" to describe a certain type of respirator is very well established. The Council recognizes that general acceptance of a word by the press establishes its meaning. Since the Council was of the opinion that "iron lung" was not a strict scientific description of the apparatus in question, the term was not permitted in acceptable advertising. The Council voted to retain the name "respirator" to describe the device.

For two years the Council has sponsored research in artificial respiration. A report was given by Drs. Andrew C. Ivy and Henry Schwerma on the research which has been conducted under their supervision. Results of these surveys will be published in due time. The Consultants on Ophthalmic Devices have been active in advising the Council relative to the use of instruments in the practice of ophthalmology. Dr. Thomas D. Allen presented a report for the Consultants and stated that articles for publication on contact lenses and artificial eyes will be prepared and submitted to the Council for adoption. The Council was gratified to learn that articles on orthoptics had been favorably received by members of the profession interested in these problems.

The work of the Consultants on Audiometers and Hearing Aids was reviewed by Dr. W. E. Grove. This group has rendered valuable service to the Council and to the cause of scientific medicine.

Council on Foods and Nutrition

ACCEPTED FOODS

The following additional foods have been accepted as conforming to the Rules of the Council on Foods and Nutrition of the American Medical Association.

James R. Wilson, M.D., *Secretary.*

PREPARATIONS USED IN THE FEEDING OF INFANTS (*See* Accepted Foods, 1939, p. 156)

Libby, McNeill and Libby, Chicago, Ill.

Libby's Strained and Homogenized Vegetables with Lamb, Milk and Barley.

Analysis (submitted by manufacturer).—Total solids 15.50%, moisture 84.50%, ash 1.04%, fat (ether extract) 2.81%, protein (N × 6.25) 3.66%, crude fiber 0.43%, carbohydrates other than crude fiber (by difference) 7.56%.

Calories.—0.70 per gram; 19.88 per ounce.

Vitamins and Minerals.—	Per Hundred Grams
Vitamin A	1,085 U. S. P. units
Thiamine	0.026 mg.
Riboflavin	0.082 mg.
Ascorbic acid	1.10 mg.
Niacin	0.64 mg.
Calcium	40.80 mg.
Phosphorus	65.10 mg.
Iron	0.88 mg.
Salt	620.00 mg.

Libby, McNeill and Libby, Chicago, Ill.

Libby's Strained and Homogenized Pears and Pineapple.

Analysis (submitted by manufacturer).—Total solids 16.35%, moisture 83.65%, ash 0.35%, fat (ether extract) 0.07%, protein (N × 6.25) 0.36 %, crude fiber 0.87%, carbohydrates other than crude fiber (by difference) 14.70%.

Calories.—0.61 per gram; 17.32 per ounce.

Vitamins and Minerals.—	Per Hundred Grams
Vitamin A	5 U. S. P. units
Thiamine	0.031 mg.
Riboflavin	0.017 mg.
Ascorbic acid	1.40 mg.
Niacin	0.20 mg.
Calcium	11.20 mg.
Phosphorus	12.90 mg.
Iron	0.84 mg.
Salt	30.00 mg.

The Beech-Nut Packing Company, Canajoharie, N. Y.

Beech-Nut Junior Squash.

Analysis (submitted by manufacturer).—Total solids 10.3%, moisture 89.7%, ash 0.5%, fat (ether extract) 0.3%, protein (N × 6.25) 1.1%, crude fiber 0.1%, carbohydrates other than crude fiber (by difference) 8.3%. Specific gravity 1.053.

Calories.—0.4 per gram; 11 per ounce.

Vitamins and Minerals.—	Per Hundred Grams
Vitamin A	2,540 U. S. P. units
Thiamine	0.018 mg.
Ascorbic acid	2.90 mg.
Riboflavin	0.063 mg.
Niacin	0.19 mg.
Calcium	30.00 mg.
Phosphorus	12.00 mg.
Iron total	0.90 mg.
Iron "available" (bipyridyl method)	0.70 mg.
Copper (McFarlane method)	0.20 mg.

The Beech-Nut Packing Company, Canajoharie, N. Y.

Beech-Nut Strained Vegetables with Bacon.

Analysis (submitted by manufacturer).—Total solids 18.25%, moisture 81.75%, ash 1.47%, fat (ether extract) 4.12%, protein (N × 6.25) 1.72%, crude fiber 0.29%, carbohydrates other than crude fiber (by difference) 10.65%.

Calories.—0.87 per gram; 25 per ounce.

Vitamins and Minerals.—	Per Hundred Grams
Vitamin A	1,220 U. S. P. units
Thiamine	0.047 mg.
Ascorbic acid	0.42 mg.
Riboflavin	0.056 mg.
Niacin	0.67 mg.
Calcium	27.00 mg.
Phosphorus	38.00 mg.
Iron total	0.28 mg.
Iron "available" (bipyridyl method)	0.19 mg.
Copper	0.17 mg.

The Beech-Nut Packing Company, Canajoharie, N. Y.

Beech-Nut Junior Vegetables with Bacon.

Analysis (submitted by manufacturer).—Total solids 16.78%, moisture 83.22%, ash 1.61%, fat (ether extract) 3.54%, protein (N × 6.25) 1.53%, crude fiber 0.25%, carbohydrates other than crude fiber (by difference) 9.85%.

Calories.—0.77 per gram; 22 per ounce.

Vitamins and Minerals.—	Per Hundred Grams
Vitamin A	1,033 U. S. P. units
Thiamine	0.035 mg.
Ascorbic acid	0.79 mg.
Riboflavin	0.040 mg.
Niacin	0.84 mg.
Calcium	28.00 mg.
Phosphorus	30.00 mg.
Iron total	0.43 mg.
Iron "available" (bipyridyl method)	0.28 mg.
Copper	0.15 mg.

The Gerber Products Company, Fremont, Mich.

Gerber's Ready to Serve Barley Cereal.

Analysis (submitted by manufacturer). — Total moisture (indirect method) 7.2%, total ash 4.4%, fats (acid hydrolysis) 4.9%, protein (N × 6.25) 13.2%, crude fiber 1.1%, carbohydrates other than crude fiber (by difference) 69.2%.

Calories.—3.7 per gram; 106 per ounce.

Vitamins and Minerals.—	Per Hundred Grams
Thiamine	2.69 mg.
Riboflavin	0.84 mg.
Calcium	494.0 mg.
Phosphorus	680.0 mg.
Iron	51.0 mg.

Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.

Austin Smith, M.D., *Secretary.*

MENADIONE (See New and Nonofficial Remedies, 1946, p. 650).

The following dosage forms have been accepted:

E. S. Miller Laboratories, Inc., Los Angeles

Solution Menadione (in Oil), 1 mg. per cc.: 1 cc. ampuls. Each cubic centimeter contains 1 mg. of menadione with benzocaine 2 per cent. Preserved with 0.5 per cent cresol.

Tablets Menadione: 1 mg.

The Vale Chemical Co., Inc., Allentown, Pa.

Tablets Menadione: 2 mg.

THEOPHYLLINE ETHYLENEDIAMINE (See New and Nonofficial Remedies, 1946, p. 395).

The following dosage form has been accepted:

Barlow-Maney Laboratories, Inc., Cedar Rapids, Iowa

Tablets Aminophylline: 0.1 Gm. and 0.2 Gm.

Premo Pharmaceutical Laboratories, Inc., New York

Enerels Aminophylline: 0.1 Gm. Each tablet is enteric coated with a shellac-castor oil mixture.

BISMUTH SUBSALICYLATE (See New and Nonofficial Remedies, 1946, p. 251).

The following dosage form has been accepted:

Abbott Laboratories, North Chicago, Ill.

Bismuth Subsalicylate in Oil with Chlorobutanol 3%: 1 cc. ampuls; 30 cc. and 60 cc. bottles. A suspension of bismuth subsalicylate in a mixture of peanut oil and ethyl esters of olive oil fatty acids containing in each cubic centimeter 0.13 Gm. of bismuth subsalicylate and chlorobutanol 3 per cent with metaphen 1:20,000.

ASCORBIC ACID (See New and Nonofficial Remedies, 1946, p. 631).

The following dosage form has been accepted:

Buffington's Inc., Worcester, Mass.

Tablets Ascorbic Acid: 25 mg., 50 mg. and 100 mg.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, MARCH 29, 1947

"HISTORY OF AMERICAN MEDICAL ASSOCIATION"

The instalment of the "History of the American Medical Association" which appears in this issue of The Journal covers the years 1920-1924. With this instalment publication of the history will be discontinued in The Journal. The complete history of the Association up to June 1947 will appear in the volume which is to be published by the W. B. Saunders Company for the American Medical Association. There will be additional chapters on "The Home of the American Medical Association," "Dr. George H. Simmons," "The Libel Suits of the American Medical Association" and "The Indictment and Trial of the American Medical Association by the U. S. Government." The second part of the book will include biographies of the one hundred presidents of the American Medical Association with a picture of each and with facsimile signatures of all but one. These have been prepared by Dr. Walter L. Bierring. The third part of the book will be devoted to the Councils and Bureaus of the American Medical Association, except for some of the Councils whose work is fully described in the general account of the Association's work. The articles on the work of the Councils and Bureaus have been prepared in most instances by the secretaries of these agencies, with the exception of the article on the Judicial Council, which is written by Dr. Morris Fishbein. The history of the Advertising Department has been prepared by Mr. Thomas R. Gardiner, business manager. The fourth part of the book concerns the publications of the American Medical Association other than The Journal and includes articles descriptive of the history of each of them. In most instances these articles were prepared by the present chief editor of the periodical concerned. An appendix will provide tabular data, including places of meeting, the membership of many of the Councils and similar subjects. The book will be completed with both a name and a subject index. The publishers anticipate that the book will be available for distribution at the Centenary in Atlantic City in June.

PROGRESS IN OTOSCLEROSIS

A recent report on twenty years of research in otosclerosis and related problems[1] presents some interesting observations on the prevention and treatment. Davenport, Milles and Frank, who studied the distribution of clinical otosclerosis in several generations of sixty families, found that the females in these families were affected about twice as frequently as the males. When both parents were deaf, nearly all their daughters and nearly two thirds of their sons were deaf. However, the studies of Davenport indicate that the type of blood does not indicate who would be expected to develop defects conducive to otosclerosis. The observations of Guild support the contention of other workers that when the deafness was caused by otosclerosis it was due solely to an ankylosis of the stapes. His statistical studies suggest that in the United States there are between ten million and twelve million white people with otosclerosis and that 1,000,000 to 1,200,000 of these have ankylosis sufficient to cause deafness.

Fowler stresses the importance of a prior audiogram in the early diagnosis of otosclerosis. For this children should be tested on first entering school and again before entering high school. The most encouraging information revealed by research, according to Fowler, is the evidence that otosclerosis need not necessarily progress to deafness in each instance but may become arrested at any stage of its development. There is, however, no cure for the lesions of otosclerosis. Even when it is prevented or arrested there will be no change in inheritability under favorable environmental conditions.

Preventive treatment consists in careful supervision in otosclerotic families of the mother during pregnancy and the puerperium. Such general measures as attention to diet, ample vitamin and mineral contents and correction of any detected abnormality may in some measure offset the tendency in the mother and the infant toward the condition. Loss of hearing from otosclerosis may be lessened by prostheses such as hearing aids of the air or bone conducting variety. A number of these have been accepted by the Council on Physical Medicine of the American Medical Association and are quite efficacious.

The most promising operative procedure is fenestration with its many modifications. Fenestration, in the opinion of most otologists, will restore serviceable hearing in a large percentage of properly selected patients. The principal causes of operative failure result either from closure of the new window by formation of new bone or by development of fibrous tissue, or from secondary postoperative labyrinthitis. A number of modifications, such as the insertion of a movable cartilage stopple or of a perforated stopple, hold promise of still better results.

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[1] A Report of Progress: Twenty Years Research in Otosclerosis, Progressive Deafness and Correlated Problems, 1926-1946.

The report mentions anatomic studies on the developmental changes and their possible correlation with the mechanics of the ear carried on at Wisconsin and Northwestern universities. At Columbia University Fowler attempted without success to produce otosclerosis from deficient diets in rats. These experiments, supported in whole or in part by the Central Bureau of Research of the American Otological Society, Inc., have contributed much toward greater knowledge of the physiologic and pathologic processes involved in otosclerosis.

IMPROVED MUMPS VACCINE

Mumps as a disease of military personnel may be exceedingly troublesome, causing loss of time from duty and interfering with the movement of troops. Extensive investigations were therefore undertaken by Enders and his associates[1] of Harvard Medical School in hope of developing specific diagnostic methods for doubtful cases and the discovery of a successful prophylactic vaccine.

In their initial experiments about 3 cc. of saliva collected on the first and second days of the disease in a typical human attack was introduced into the Stensen duct of a monkey (Macacus mulatta). On the fifth day the gland, which was somewhat enlarged, was removed, emulsified and inoculated into both ducts of a second monkey. On the seventh day the second animal presented swelling of both parotid glands with subcutaneous edema of both cheeks. In this way the virus was passed through a series of monkeys, some of which received bacteriologically sterile material obtained by filtering the parotid emulsion through an Elford collodion membrane.

Antigens for use in complement fixation tests were prepared from weighed portions of the infected glands removed at the height of the experimental disease. They found that the serums of monkeys taken before inoculation or at the height of the experimental infection do not fix complement in the presence of this antigen. Serums from monkeys during convalescence invariably fix complement in titers varying from 1 : 128 to 1 : 2,048. Complement fixing antibodies persist in convalescent serum for at least three and a half months. Similar results were obtained from human beings.

This antigen may have numerous practical applications. Extensive applications, however, will presumably depend on the discovery of a more readily available and cheaper source of antigen than extracts from infected monkey glands. In an attempt to find such a cheaper and more abundant source of vaccine, the Harvard investigators[2] succeeded in cultivating the virus in the developing hen's egg. They were unable to cultivate it in the embryonated yolk sac, but serial transfers were readily effected in the amniotic fluid and amniotic membranes of the developing embryo. In many cases as little as a 1 : 1,000,000 dilution of the amniotic fluid produced infection in monkeys.

The virus is modified during its growth in the amniotic fluid and acquires power to agglutinate hen's erythrocytes. This property is not shown by the initial monkey gland virus. This acquired power of hemagglutination is inhibited by the serums of human beings and monkeys convalescent from mumps.

The earlier attempts to prepare a prophylactic mumps vaccine were made with formaldehyde treated virus from the parotids of infected monkeys. Injection of this nonviable formaldehyde treated vaccine into the parotids of normal monkeys did not produce local swellings of the glands, but did give rise to the development of complement fixing antibodies in the animals' blood. Maximum titer was reached by the eighteenth to thirtieth day. About 60 per cent of these vaccinated animals developed a slight but distinct resistance to subsequent infection with viable mumps virus. In certain instances, however, evidence of increased resistance to experimental inoculation was not demonstrable, yet complement fixing antibodies were found. Clinical tests[3] showed that the same slight but ineffective immunity can be produced by repeated subcutaneous injection of the formaldehyde treated virus in human beings.

More encouraging results were obtained in subsequent tests[4] with a viable mumps vaccine. This vaccine was attenuated by prolonged serial cultivation in the embryonated hen's egg. After twenty-five serial passages in the egg, the virus introduced directly into the parotid gland of the monkey no longer gives rise to the typical experimental disease. From six to fourteen weeks later, however, the vaccinated animals exhibited a solid resistance to experimental inoculation with virulent material.

These experiments have led to the expectation that the new improved mumps vaccine will prove to be a successful prophylactic agent in man, comparable to the viable vaccines employed against smallpox and yellow fever. Clinical tests of the new viable vaccine are now in progress.

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[1] Enders, J. F., and Cohen, Sidney: Proc. Soc. Exper. Biol. & Med., **50:** 180 (May) 1942. Enders, J. F.; Kane, L. W.; Cohen, Sidney, and Levens, Jeanette H.: J. Exper. Med. **81:** 93 (Jan.) 1945.

[2] Levens, Jeanette H., and Enders, J. F.: Science **102:** 117 (Aug. 3) 1945.

[3] Stokes, Joseph Jr.; Enders, J. F., Maris, Elizabeth P., and Kane, L. W.: J. Exper. Med. **84:** 407 (Nov.) 1946.

[4] Enders, J. F.; Levens, Jeanette H.; Stokes, Joseph, Jr.; Maris, Elizabeth P., and Berenberg, William: J. Immunol. **54:**283 (Nov.) 1946.

Current Comment

EFFECT OF VACCINATION ON INCIDENCE OF INFLUENZA B

Hirst and his colleagues[1] have studied the value of influenza vaccination in an epidemic of influenza B. They compared a group of 550 men attending Yale University as part of their Army Special Training Program who had received mixed A and B influenza vaccine with a group of 1,050 unvaccinated naval students studying at the same institution under similar circumstances. In the early part of November 1945 an epidemic of influenza caused almost entirely by the B virus developed. The number of cases reached a peak in about four weeks and was rapidly subsiding by the middle of December. Three cases of influenza appeared in the vaccinated group and 132 cases in the unvaccinated group, giving attack rates of 0.5 and 12.5 per cent respectively. The investigators believe it highly probable that the difference in attack rate could be attributed to the vaccination of the army group with influenza virus treated with formaldehyde. This report presents additional evidence of the value of vaccination against influenza and suggests that it may be more effective against influenza B than against influenza A.

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[1] Hirst, George K.; Vilches, Antonio; Rogers, Orville, and Robbins, Clarence L.: The Effect of Vaccination on the Incidence of Influenza B, Am. J. Hyg. 45:96 (Jan.) 1947.

A PURIFIED EQUINE ENCEPHALOMYELITIS VACCINE

Equine encephalomyelitis of the virus type has occurred in horses and mules in all but three of the forty-eight states. The disease is transmissible to man. According to Randall and his colleagues,[1] sanitary measures designed to reduce contact with insect vectors of the disease can be of some effect, but most satisfactory protection for animals and under certain circumstances for human beings is given by active immunization. Previously prepared vaccines of this type have proved satisfactory for administration to horses, but their high content of chick tissue and egg components have made them potentially dangerous for human beings. Randall and his group consequently tried to develop a concentrated virus preparation suitable for use by human beings. Three types were prepared, eastern, western and Venezuelan, by a two stage differential centrifugation process. The purified vaccines were characterized by a content of chick and egg proteins definitely lower than that of the crude vaccine used for the immunization of horses and mules and of commercial human type vaccine. All three types of vaccine confer active immunity to guinea pigs against the homologous type of virus even when the virus is injected directly into the brain. Furthermore, antibodies neutralizing the eastern type virus were demonstrated in the serums of guinea pigs following the administration of eastern type vaccines and in the serums of human subjects following the injection of a mixture of eastern and western types of vaccine.

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[1] Randall, Raymond; Mills, John W., and Engel, Lewis L.: The Preparation and Properties of a Purified Equine Encephalomyelitis Vaccine, J. Immunol. 55:41 (Jan.) 1947.

RECURRENT CEREBRAL THROMBOSIS AS A NOSOLOGIC ENTITY

There are still obscure diseases about which much can be learned by direct observation of their symptoms and course. The clinical description of disease—nosography—emphasized by Hippocrates and reemphasized by such observers as Sydenham, Allbutt and Osler is by no means completed. In a recent contribution Alvarez,[1] under the heading "cerebral arteriosclerosis with small, commonly unrecognized apoplexies" describes the clinical manifestations of this condition as observed and interpreted by him. As yet the disease thus presented is not generally understood. The condition is not described in the books and of course has no independent status in official statistics. The reason the condition is not better known appears to be mainly that cases have not been observed closely over the years of its long course followed by necropsy and thorough study of the brain at the end. According to Alvarez the cases, which may extend over many years and examples of which he reports in detail, are characterized by episodes attributed by him to thrombotic injuries to the brain and by more or less profound changes in the health, character, ability and habits of the patient. On account of its length the whole story can usually be obtained only from relatives or old friends. The first episode can come in the forties or even in the thirties. Often the illness dates from a peculiar attack at a certain time, the first one in a series of more or less typical minor "strokes." Alvarez summarizes the chronic symptoms and diagnosis in part as follows: "Diagnosis is fairly easy when the patient suddenly changes in character and ability. Some never work again. Many have an unexplained nervous breakdown. Some become somewhat psychopathic and a difficult problem in the home. Some deteriorate morally. . . . Many lose their grooming and go about with dirty clothing. . . . Acute episodes are often thought to be attacks of 'acute indigestion.' . . . Often in order to make the diagnosis one must talk to the relatives and business associates. They alone will tell of sudden aging and of big changes in character and ability." Alvarez ascribes the symptoms to thrombosis of small arteries in the brain, with necrosis of brain tissue. Silent areas of the brain may be affected as well as centers and tracts. He takes it as granted that the fundamental process is sclerosis of small cerebral arteries, but as yet a thorough study has not been made of the brain in typical cases with complete clinical records. He himself refers to only one necropsy and pictures scattered thrombotic foci in the brain. He points out the need of close correlation of the clinical phenomena with the results of morphologic studies of the cerebral lesions. Opportunities which frequently will come to the pathologist to work so to speak backward should not be neglected. When the brain is found speckled with little brown spots and scars in a case without any record of the symptoms, questioning of the family and friends may yield significant information. Active cooperation by clinician and pathologist is required to advance the understanding of recurrent cerebral thrombosis.

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[1] Alvarez, W. C.: Cerebral Arteriosclerosis with Small, Commonly Unrecognized Apoplexies, Geriatrics 1:189 (May-June) 1946.

ORGANIZATION SECTION

JOINT COMMITTEE FOR THE COORDINATION OF MEDICAL ACTIVITIES

Report of Meeting in Chicago, Jan. 11, 1947

The Joint Committee for the Coordination of Medical Activities met at the American Medical Association Building in Chicago, Saturday, Jan. 11, 1947. Those present included:

Col. George E. Armstrong
Dr. Walter L. Bierring
Dr. Warren F. Draper
Capt. William E. Eaton
Dr. Morris Fishbein
Dr. E. L. Henderson
Mr. Thomas A. Hendricks
Mr. J. W. Holloway Jr.
Dr. Ernest E. Irons
Dr. B. R. Kirklin
Dr. George F. Lull
Dr. James M. Mason
Col. Hugo Mella
Dr. F. V. Meriwether
Dr. J. J. Moore
Dr. H. B. Mulholland
Dr. James E. Paullin
Dr. Carl M. Peterson
Lieut. Col. William N. Piper
Father A. M. Schwitalla, S. J.
Dr. R. L. Sensenich
Dr. Dean F. Smiley
Miss Mary Switzer
Lieut. Col. John H. Voegtly
Mrs. M. V. Shuler

COMMITTEE REPORT TO SUPPLEMENTAL SESSION OF THE HOUSE OF DELEGATES

The Chairman gave a résumé of the report he had prepared and presented before the Supplemental Session of the House of Delegates of the American Medical Association in December and read the report of the Reference Committee commending the continued activity of the committee under its new name (The Journal, Dec. 28, 1946, pp. 1077 and 1092).

CHANGES IN MEMBERSHIP

The Chairman made the following announcements concerning changes in membership: Mr. Barry C. Smith, a member of the American Medical Association Committee, is unable to continue membership for reasons of health and has suggested that the Commonwealth Fund might continue to be represented by Dr. Lester J. Evans, medical associate; the Surgeon General of the United States Public Health Service has appointed Dr. Palmer Dearing, chief of the Division of Commissioned Officers, to represent the Public Health Service, succeeding Dr. Warren F. Draper, and has asked Dr. F. V. Meriwether of Chicago to attend the January 11 meeting since Dr. Dearing cannot attend; the American Red Cross, on request, has indicated its desire to join the deliberations of this committee, which enables the Committee to have the continued membership of Dr. Draper as the Red Cross representative; Dr. H. B. Mulholland of Charlottesville, Va., a member of the Committee on Rural Medical Service, will represent that committee in place of Dr. F. S. Crockett, resigned.

The Committee accepted Mr. Smith's resignation with regret and welcomed the suggestion that Dr. Evans succeed him, representing the Commonwealth Fund.

QUESTIONNAIRE OF COMMITTEE ON RURAL MEDICAL SERVICE

The Chairman presented copies of a questionnaire that had been sent out by the Bureau of Information under the name of the Committee on Rural Medical Service and the Joint Committee for the Coordination of Medical Activities and stated that while the Joint Committee at its meeting in October had discussed the desirability of obtaining information as to the present physician population, especially with respect to the probable postwar changes in distribution, no action involving a questionnaire had been taken. The Committee approved the questionnaire bearing the name of the Joint Committee.

Dr. Mulholland said that the purpose of the questionnaire is primarily to gather information on the distribution of physicians throughout the country at the present time and that it is hoped to have some data compiled for presentation in an exhibit at the Atlantic City session of the American Medical Association in June. Miss Switzer suggested that in assembling data provided through the questionnaire use might be made of the latest distribution reports the Procurement and Assignment Service had when it was dissolved, so that changes in the situation since that time could be shown. She thought that such a comparison would reveal the change in the distribution as influenced by relocating returned medical officers. Dr. Paullin said that most of the states have the Procurement and Assignment data in readily accessible form.

The Chairman added that it would be expected that reports on the results obtained would be provided for the information of the Joint Committee. Mrs. Shuler of the Bureau of Information informed the Committee that the questionnaire had been sent, with a covering letter, to the secretaries of the state medical societies, who are distributing them with a letter of explanation to the county medical societies.

REPORT OF SUBCOMMITTEE ON SURPLUS MEDICAL, DENTAL AND HOSPITAL SUPPLIES

Father Schwitalla, Chairman of the Subcommittee, said he had nothing further to report but would like to suggest to the Joint Committee that one last effort the Subcommittee might make before being discharged is to attempt to secure the reactivation of Directive 23, issued some time last summer by the War Assets Corporation, which was to have expired—he thought—on Dec. 31, 1946. This directive made available to educational institutions surplus supplies of rather large and important character. The reactivation of Directive 23 so that its provisions would carry over into 1947 or for an indefinite time might be of advantage.

Miss Switzer, a member of the Subcommittee, stated that she had been going to recommend that the Subcommittee be discharged, but in view of Father Schwitalla's suggestion perhaps this one thing could be done and the Subcommittee continue in existence at least until the next meeting. She further said that the manner of distribution of surplus supplies in the medical field has been and is extremely confused, but there does not seem to be anything that any one can do about it now except that perhaps this one directive could be reactivated and much accomplished; the War Assets Corporation is trying to do a good job, but the pressure to dispose of these supplies commercially is almost irresistible.

The Committee voted to ask Miss Switzer to urge the reactivation of Directive 23. The Committee was reminded that the War Assets Corporation is legally required to distribute surplus property to educational and health institutions under certain conditions, at, however, the Corporation's discretion.

There was discussion of the position in which individuals are placed in the matter of securing surplus property, and it was the consensus that the situation is deplorable, Dr. Paullin stating that many of the returned medical officers are unable to open offices because they cannot get equipment of any kind from any source.

The Chairman stated that the Subcommittee would be continued until the next meeting in order that an attempt may be made to secure the reactivation of Directive 23.

SPECIALTY BOARD FOR GENERAL PRACTITIONERS

Dr. Bierring, Chairman, read a report of the Subcommittee on Specialty Board for General Practitioners, appointed at the October 12 meeting. The other members of the Subcommittee are Dr. Kirklin and Dr. Sensenich.

The subcommittee is submitting this report as a preliminary one, because the many problems involved make further study necessary before a final report and proper recommendations can be formulated.

Recently there has been a decided revival of interest and activity by and for the general practitioner in some form of certification or special designation for those physicians who are engaged in the general practice of medicine. With the growth of specialization in medicine and the certification of the different medical specialties, it is becoming increasingly difficult—as well as an unfortunate necessity—to draw a sharp line between general practice and the different forms of limited or specialized practice.

The general practitioner has, or believes he has, some very definite complaints against the overweaning influence of the specialist. Some of these are inadequate proportional representation in the government of medical societies and medical affairs generally; lack of opportunity for postgraduate study in comparison with that afforded specialists; lack of recognition among physicians generally of the professional attainments of the general practitioner, and the fact that, the general hospital in no way recognizes the general practitioner as such in its staff organization.

The overwhelming influence of the specialist in medical affairs denies the general practitioner a reasonable opportunity to keep abreast of modern progress by the tendency to relegate all institutional medical work to specialists of one kind or another, which is, at present, the procedure adopted by the Veterans Administration in the appointment of attending and consulting staffs. Patients complain that it is difficult even to find a general practitioner, and this is traceable in part to the present organization of hospital staffs, which does not provide a place for a general practitioner.

What procedure should be considered for the more dignified recognition of general practice to make it the keystone of medical service? Several methods of experimentation have been proposed, and some are being carried out.

Thus far it has been difficult to define general practice adequately or to define the function and place of the general practitioner in the present scheme of medical practice. In a general way it is thought to include a general comprehensive diagnostic and therapeutic knowledge of general medical and surgical disease conditions, ability to make a complete health examination, qualification for the treatment of general uncomplicated disorders of children or of the skin, and qualification for the practice of obstetrics and minor surgery—the cultured family doctor and adviser.

What should be the character of certifying or qualifying tests for the general practice of medicine? At the Congress on Medical Education and Licensure in February 1941 the late Dr. Louis B. Wilson, director of the Mayo Foundation and member of the National Board of Medical Examiners, in reviewing the results of twenty-five years of the board's activities, suggested that its examination, which was and is today the most comprehensive test, written and practical, of knowledge for the general practice of medicine now operating in this country, might serve as a pattern or means of certifying or specially qualifying physicians for general practice. It was further suggested that diplomates of the National Board remaining in general practice for five or ten years and giving evidence of having progressed by further study be elected as fellows of the National Board. A special committee was appointed to study the practicability of the suggestion, but the advent of World War II discontinued this activity. At the present time it is unlikely that the National Board can undertake the certification for general practice on a national basis because of the magnitude of the task. However, in any plan for the certification of physicians for general practice, the National Board examination might well serve as a pattern and its certificate considered for reciprocal recognition.

One state medical association, Indiana, has developed a definite plan for the certification of general practitioners. This plan is now in operation. The by-laws of the Indiana Board of General Practice of Medicine, Inc., provide, among other things, that:

"The original membership of this organization shall be composed of not more than two hundred reputable physicians engaged in the general practice of medicine, who have been so engaged for at least ten years.

"Additional members shall be general practitioners of medicine who have passed the examination provided for in these by-laws and presented to the board of directors satisfactory proof of the following qualifications:

"1. Membership in a local county medical society and citizenship of the United States.

"2. High moral and ethical standing in the profession.

"3. Graduation from a medical school recognized by the Council on Medical Education and Hospitals of the American Medical Association.

"4. Completion of an approved internship, preferably of the general rotating type, in a hospital approved by the same Council of the American Medical Association.

"5. Continuance of postgraduate education.

"6. A minimum of five years of general practice after completion of an approved internship.

"In special instances the board may accept for examination outstanding candidates who were in practice prior to Jan. 1, 1930 but whose formal training does not comply with the full preliminary requirements stated herein.

"The examination in which all applicants shall be required to make a passing grade shall include:

"Part I. A review of case reports.

"Part II. A written clinical examination.

"Part III. An oral clinical test.

"Part IV. Demonstration of ability at bedside and in laboratory.

"The following is an outline of matters to be included in each of these four parts:

"Part I. The candidate must file twenty-five case reports, in condensed form, for which he was personally responsible. These case reports must be sufficiently complete to enable the examiners to evaluate the judgment of the candidate in his choice of procedure and must include

"1. An account of the candidate's personal observation of the case.

"2. The basis for diagnosis.

"3. The facts which determined the course of treatment.

"4. Critical conclusions to be drawn from the outcome of the case.

"These case reports may cover a variety of material in one or more of the following fields: infectious diseases; deficiency diseases; diseases of metabolism; neoplastic diseases; diseases of the gastrointestinal tract, respiratory system, kidneys, blood-forming organs, circulatory system, glands of internal secretion, nervous system, bones, joints and muscles; obstetrics; pediatrics; dermatology; neuropsychiatry; office gynecology; surgery, and allergy.

"Part II. The written examination will cover the basic medical sciences, and subjects pertaining to the general practice of medicine, having in view the determination of the question as to whether the applicant possesses the quality and extent of medical knowledge necessary for general practice of a high order.

"Part III. The oral clinical test will be directed to the ascertainment of the candidate's familiarity with recent medical literature, the breadth of his clinical experience, his capabilities, general adaptability, comprehension and understanding of the patient's problems as a whole, and other qualifications requisite for highly competent general practice.

"Part IV. Demonstration of ability at bedside and in laboratory will include the assignment of one or more patients in a hospital to the applicant so that his approach and procedure in handling a new patient may be observed by the Committee on Examinations.

"Applicants who successfully complete one part of the examination may proceed to the next part in the order in which the parts are listed until they have completed the entire examination. Whenever an applicant fails to pass the examination, or any part of it, the Committee on Examinations, on request, will make suggestions as to suitable courses of instruction or other means of improvement through which the applicant may overcome any deficiencies causing such failure. Any applicant who fails to pass an examination, may, on payment of an additional fee of $15, take another examination." (The first fee accompanying the application is $25.).

The by-laws further provide that there shall be a president, a vice president, secretary and treasurer of the corporation, who shall be members of the board of directors, and that the board of directors shall consist of fifteen members. There also is provision in the by-laws for the revocation of a certificate, causes for revocation being given as "violation of the Principles of Medical Ethics of the American Medical Association, misrepresentation or fraud in obtaining a certificate, conduct unbecoming to a physician or discrediting to the board," also "if the license to practice medicine of any physician holding membership in this corporation is revoked or suspended, or if he is expelled from his county medical society, such event shall operate as a revocation of his certificate . . ." Hearings in cases of proposed revocations are provided for in the by-laws and "a vote of at least two thirds of the members or directors present at the hearing" is required to revoke.

It is understood that other medical societies are considering similar plans.

This subcommittee desires at this time to make the following recommendations:

1. That general hospitals be encouraged to establish a special service for general practice.

2. That special residencies in general practice be established wherever practical.

3. That in the development of certifying specialty boards for general practice on a state level (*a*) reasonable consideration be given to the older general practitioners being placed in the founders group; (*b*) additional examinations be required or evidence be submitted at least every ten years of progressive practice or postgraduate studies; (*c*) postgraduate courses, institutes or seminars be developed for diplomates of general practice or prospective applicants for the certifying examination and the interest of specialists in such courses enlisted; (*d*) some form of general supervision or unification of procedure of certification, a central coordinating influence, be established on a national basis, and (*e*) every possible source of publicity and education in regard to this new movement be encouraged.

The subcommittee thoroughly appreciates the importance of this whole matter with respect to the future practice of medicine in this country, and it therefore urges further careful study by the American Medical Association and other professional agencies concerned.

Miss Switzer thought it would be extremely important to have a national board for general practitioners and asked for enlightenment as to what would happen to physicians who are qualified doctors of medicine and general practitioners, and who might not be interested or eligible for membership in a board such as described, and also if the Joint Committee thinks the establishment of such a board would close the gaps in the present specialty certification so that any doctor who is worth anything would, one way or another, be connected with a specialty board.

Dr. Sensenich said that this matter has been a source of concern to a great many physicians. The success of any project depends on how well the field is covered, and when a substantial portion of any mechanism is excluded the project is doomed to failure. Basically, the specialty boards were set up originally to improve the standards of specialization and, basically also, in the interest of the patient. As a result they have become more or less an aristocracy from which the general practitioner is excluded, and the general practitioner feels this to be so. Thus, a hard and fast line is drawn between the specialists and the remaining sixty or seventy thousand physicians who are general practitioners. If you are going to select from that group a relatively small number for special recognition and certification, you create from the residue a vast group who will not be in sympathy with the program. It would seem desirable to include in the remaining program every doctor who wants to practice good medicine. Perhaps there should be a national board to conduct examinations such as are conducted by the National Board of Medical Examiners; perhaps such a special board could create some term that would designate the individual general practitioner who, from year to year, makes an effort to continue his practice on a high plane; in other words, some pattern might be devised for continuing graduate work from year to year that would be available to all. The essential thing is that the general practitioner must have access to the hospitals, where he will do his work under supervision and do it much better than outside with no supervision.

Dr. Kirklin made the comment that this is an extremely important subject among physicians at the moment. At a recent meeting of the house of delegates of a state medical association four resolutions pertaining to the general practitioner were introduced, one of them calling for the establishment of a certifying board and the other three condemning the specialty boards as being to blame for the alleged exclusion of the general practitioner from hospital staffs. Most hospitals now are demanding that surgery done in the hospital be done only by those who are certified; this excludes the general practitioner who can and wants to do hospital surgery. In some states hospitals have gone so far as not to allow any one to take care of patients in the hospitals unless he is certified by a specialty board. That is an action by the hospitals themselves and not of the boards. One of the resolutions just mentioned recommended that hospitals establish sections on general practice to enable the general practitioner to take his patients into the hospital. It is possible that in the effort to raise the standards of medical practice too drastic steps may be taken. The Indiana movement resulting in the establishment of the Indiana Board of General Practice already has spread; Ohio is now contemplating the creation of a board of general practice.

The Chairman made the following statement concerning the origin and development of the various specialty boards: The specialty boards were set up originally for the protection of the public; before there were any boards any one could set himself up as a specialist merely by saying he was one, and often men who were calling themselves specialists were not particularly well prepared in the specialties they professed. Another factor in the organization of the specialty boards was that the founders saw in them an opportunity for stimulating continuing education of the younger men and a means for further elevating the quality of medical practice. The effect of the organization of these boards has been tremendously greater than any one had any conception of when the movement began. The founders group of the American Board of Internal Medicine, for instance, set up its plans of operation with the expectation of examining probably 200 applicants a year; at the examinations in 1946 there were 800 applicants; however, that is probably a larger number than will be examined in future years since it included many men who had been in the armed services and had not had opportunity to take the examination. During the war, when cooperation could be obtained from the commanding officer, the written part of the examination was conducted overseas. The Surgeon Generals of the Army and Navy gave the most cordial cooperation. This activity contributed to the war effort in no small degree. Fifty per cent of the interns are calling for residencies in specialties because they want to qualify for certification by a specialty board. Whether they qualify or not, they will have spent five years of additional study and the natural corollary is that the public will be provided with better treatment. Thus, from an educational point of view and from the point of view of the betterment of the public health, the specialty boards have accomplished enormously more than was expected. As to the other side of the picture, very early in the movement the administrators of some state welfare laws insisted that only certified practitioners in certain specialties would be eligible for appointment to newly created positions. Other physicians felt that there was, thus, improper discrimination against them. A great many hospitals wanted to be approved by the Council on Medical Education and Hospitals and so thought they should require that every staff member be certified. Many capable physicians in hospitals have never become certified in any specialty. Then, the Army and Navy gave preference in Army and Navy hospitals to those certified. In these ways the movement has grown. It does not help the general practitioner. It would not appear to be wise, however, for the Advisory Board for Medical Specialties to have a part or responsibility, even an advisory responsibility, in the overall certification of general practitioners, since it is difficult to see how that could be done and the board's standards for its other work maintained. The quality of medical education, medical procedure and medical practice in this country has risen enormously in the past twenty years. The Army and Navy found that out during the recent conflict. Nothing should be done that would tend to interfere with the progress of the improvement of medical practice. There is much to be said for the idea that there ought to be a very liberal interpretation of what constitutes a good practitioner, but if you skim off a layer of cream you still have a large residue. It is no fault whatever of the specialty boards that hospitals are demanding that all men on their staffs be certified.

Father Schwitalla said that the hospitals are the victims in this movement; it is the hospital staffs that have taken the lead in the new regulations, and the hospital administrations have followed that lead.

Dr. Henderson agreed with Father Schwitalla, saying that the hospital administration has often followed the staff, and the members of the various boards have controlled the staff, which, in turn, controls the administration; much of this has come about because of the shortage of hospital beds.

It was Father Schwitalla's opinion that the increasing number of certifications has made the matter crucial, that the problem is very much smaller where the staff has taken a broad attitude, and that where there is freely given consultation there is no major problem and the general practitioner is perfectly willing to come in, especially in the obstetric department. He said the general practitioner should be encouraged to call for consultation. He also said that in the course of the past four or five months he had interviewed many graduates of St. Louis University School of Medicine and had learned that a greater number than formerly are planning to go into general practice.

Dr. Sensenich suggested that out of the residue of physicians who are not acceptable to the specialty boards some of the group might be permitted to take examinations for certification, but beyond that point some designation might be given to individuals without examination who display evidence of doing good work, continuing their education and trying to keep up to date; this pattern might be formed on a national basis.

Dr. Kirklin stated that most of the specialty boards will not admit a physician to examination unless he furnishes a statement that at least 75 per cent of his practice is limited to his specialty, and some of the boards require 100 per cent. The subject was further discussed by Dr. Mason, Father Schwitalla, Dr. Bierring and Miss Switzer.

TAFT-FULBRIGHT BILL (S. 140)

The Chairman brought to the attention of the Committee a report which appeared in the morning newspapers (Saturday, January 11) that Senators Taft and Fulbright had introduced a bill in the Senate for the establishment of a Department of Health, Education and Security, which calls for a secretary of cabinet rank, with three under secretaries for health, education and security.

After lengthy discussion the Chairman stated that a résumé of the various remarks would be prepared for the minutes, and the Committee voted for the appointment of a subcommittee to study the subject and be prepared with essential facts for discussion at the next meeting of the Joint Committee. The Chairman appointed as members of the new subcommittee Dr. Walter L. Bierring, chairman; Dr. R. L. Sensenich, and Miss Mary Switzer.

A résumé of the discussion on the Taft-Fulbright Bill follows:

Dr. Fishbein. A conference called by the National Social Welfare Assembly and the American Council on Education is to be held in Washington on *January 31. Representatives of a great many organizations* have been asked to attend and discuss the Taft-Fulbright measure. It would be well for those who are to speak for the medical profession to have some understanding of the basic considerations: The desirability of having a secretary in the President's Cabinet to cover the three branches involved or of having a division in the government which would be quite independent of security, the problem of guarding and guiding the selection of the cabinet officer, and, finally, the type of activity that should be included. Obviously, health has many aspects closely related to education and security. The American Medical Association has been asked to send two representatives to the conference, but its sponsors have not asked for a representative of medical education, and the bill includes funds for medical education. The first meeting is for preliminary discussion, and there probably will be three or four meetings before they get to the point of making recommendations. If the fact that there is no representative of medical education in the conference should be brought before the group, the leaders in education and security would welcome liaison near the top.

The Joint Committee for Coordination of Medical Activities should talk about this bill and make recommendations for consideration to its parent bodies.

Miss Switzer. It would be an advantage to have a Cabinet officer. Opportunities for communication and discussion regularly established with the President do not exist when an agency has no Cabinet member at its head. If the head of the department were a member of the Cabinet, he might be able to put across the point of view his agency advances. Right now it would be impossible to get three Cabinet posts, one for health, one for education and one for security, but one post covering all three might be obtained.

Father Schwitalla. The recognition of professional aspects under each one of these three heads is just as important as, even more important than, the single Cabinet member. I would like to see the strongest possible statement about safeguarding professional aspects in each one of the three fields. The provision of medical care has to be safeguarded. Recognition of professional interests and the specific requirements of each of the three departments as well as the interrelationships of the departments should be written into the law.

Dr. Sensenich: The profession would definitely oppose appointment of a man whose experience has been entirely in overseeing a health agency.

Dr. Fishbein. I am sure the education people would have the same attitude in their field, as to the security field, any one probably would be acceptable.

Dr. Draper. The man who is under secretary for health should have exactly the same organization and should be the same kind of man who would be the secretary in the Cabinet.

Father Schwitalla: The difference between the top man and the under secretary would not lie in any other thing except in the professional qualifications.

Miss Switzer. It would be wise to try to safeguard the points mentioned and leave out the rigidity of the assignment of bureaus; try to get the mandates for the secretary written in very general terms, avoiding a rigid internal organization.

Father Schwitalla. The National Education Association is going to have a lot to say where college and professional education enter into the picture.

Dr. Fishbein: The present Commissioner of Education always has had a liberal attitude and recognizes that the control of education is distinctly a local matter. Suppose the next man, as head of a federal bureau, conceives it his duty to say "We set the pattern of teaching"? It can be seen that there are distinct hazards in control by indirect means in a bureaucracy.

Miss Switzer. If the wrong type of professional person is in one of these important places, the public interest is very apt to be entirely ignored. The political agencies of government should have, in a broad *sense, a broad public interest. It is important to keep a balance between* the necessities and the proper professional qualifications and at the same time not to overlook the fact that the officials do represent the public interest.

Father Schwitalla: There should be in the bill a full recognition of the work of the private agencies in all three fields according to the pattern of the Hill-Burton bill where the words "private agencies" are incorporated in the crucial parts.

Miss Switzer. That is right. There ought also to be something in the bill about advisory *councils and committees* and some sort of continuing counsel for the administrator.

HOSPITAL RESIDENCIES

In the absence of Dr. Victor Johnson, the Chairman read the following statement:

Since the last meeting of this committee there have been no great changes in the status of hospital residencies and physician veterans. The number of requests for appointments is diminishing, although approval of new institutions for such training is continuing.

SUPPLY OF MEDICAL STUDENTS

The Chairman read the following report from Dr. Johnson:

The Council on Medical Education and Hospitals is now compiling enrolment statistics for the freshman class that entered medical schools in the autumn of *1946.* We have received the figures to date from fifty eight medical schools. In these schools there is a total enrolment of 4,268. This figure may be compared with the enrolment in last year's freshman class, which in the schools thus far reported amounted to 4,291. This indicates that the decrease in enrolment in the fifty eight schools is not very great. Enrolments have been maintained because of the large number of veterans admitted. In the schools reported, these totaled 2,491, which constitutes about 58.4 per cent of freshmen in these fifty eight schools. The figures for nineteen institutions have not yet been received.

Father Schwitalla commented that with reference to the future of medicine there may be some misinterpretation of the contrasting figures presented by Dr. Johnson. He stated that a spot study made in the colleges of arts and sciences about two months ago revealed that the student mortality—defections—at the end of the '45-'46 school year was so much less that some of the colleges are a great deal worried as to what is to be done with the upper classmen. The number of failures has dropped from 20 per cent to 9 per cent, so that the sophomore, junior and senior classes will be very much larger and, if that should be the case in the medical schools, there will be a distinct problem. He thought some of the reasons for the better showing on the part of college students are that the present students are older, more earnest and want to be educated and there probably is a little better selection among students admitted to college because of the great number trying to get in.

Dr. Johnson's report was accepted as one of progress with the anticipation that he would have something more to report at the next meeting.

GRADUATE EDUCATION AND LOCATIONS FOR PRACTICE OF PHYSICIAN VETERANS

The Chairman presented letters from physician veterans serving residencies under the G. I. bill, in which complaints were made that the Veterans Administration is not allowing them the money to which they are entitled under the G. I. bill for the purchase of books.

Father Schwitalla stated that the Veterans Employment Service and its branch offices throughout the country are receiving requests concerning locations for practice from a continuingly large number of veteran physicians and dentists and that the Employment Service would like to be as helpful as possible. He asked if the Joint Committee for the Coordination of Medical Activities might not properly request the American Medical Association and the American Dental Association to give out statements which could be used by the Veterans Employment Service in all its branches telling them where to refer physicians and dentists for the desired information. He thought that perhaps the men now being demobilized have not had the benefit of the counseling that was given formerly, and Miss Switzer also thought that the men who were at demobilization points for counseling purposes a year ago are no longer there. Dr. Lull said the American Medical Association would be very glad to send a statement such as suggested by Father Schwitalla.

Dr. Lull commented that the man who has come out of service finds himself involved in a vicious circle; he took his state board examination when he got out of school; he is now a resident in a hospital and cannot become a member of a county medical society while he is a resident and cannot take a specialty board examination because he is not a member.

Father Schwitalla, chairman of the Subcommittee on Graduate Education of Physician Veterans, said: An ordinary civilian's patience becomes exhausted eventually, and it is a question whether one should keep on pushing a federal agency or let the federal agency have its way. When we first tried to organize the graduate instruction of residents there was a definite plan. Then we were told that the cost had to be justified, and now there has to be a cost sheet showing the expenditures. Unfortunately, the recognized medical schools and hospitals are coming into the same category as some "fly-by-night" schools, and there is no means of control.

Colonel Mella commented that in the last published minutes of the Joint Committee there was quite a critical review of the residency program under the G. I. bill and that the Veterans Administration already has had a repercussion in that some think the criticism applies to the administration's own institutions. He thought that some statement should come from the Joint Committee that the criticism does not apply to the Veterans Administration hospitals.

It was agreed that the criticism applies to the residency program under the G. I. bill being carried on in civilian hospitals, and Dr. Fishbein said that a definite statement to that effect could be prepared for an early issue of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

Father Schwitalla said that when in March 1946 the V-12 and ASTP programs were discontinued a regulation was published that all students in schools of medicine who had been in those programs and had not had at least ninety days of active service were not eligible for educational benefits under the G. I. bill, but that a month or so later the regulation was withdrawn, and it was stated that those ASTP students would be eligible even without having served in military units. The reason for the change was that men started under those auspices were stranded in the midst of their educational programs. In order to be sure that a person would not just say he was going to medical school and then not go, the boys had to sign a waiver that they would continue their education as civilians. Within the last month or so a regulation has been published withdrawing the previous regulation, and these boys are stranded again. The motivation for the second withdrawal was that the boys had signed a statement that they would continue as civilian medical students, and therefore the government is exonerated from responsibility. Father Schwitalla wondered whether these boys should be left on their own or whether an attempt should be made to do something for them. He estimated that from 35 to 40 per cent of the V-12 and ASTP students are involved.

Dr. Fishbein said that many factors are involved and that there are several sides to the picture; that those boys who were in the V-12 and ASTP programs were a favored group who did not contribute to the military service and many who were in the programs wanted to get out immediately on cessation of hostilities. He also said that the government is supporting half the students and not the other half, and it would seem that the process should stop somewhere.

There was further discussion by Dr. Lull, Father Schwitalla, Dr. Paullin, Colonel Piper and Dr. Fishbein, and the consensus seemed to be that there is little or nothing which can be done by nongovernment agencies.

AMERICAN RED CROSS BLOOD BANK PROGRAM

Dr. Fishbein presented for the information of the Committee a résumé of a nationwide blood bank and donor program being worked out by the Red Cross. This will be reported on more fully at a later meeting.

SURVEY OF MEDICAL SCHOOLS

For the information of the Committee, the Chairman read the following statement prepared by Dr. Johnson:

> On recommendation of the Council on Medical Education and Hospitals, the Board of Trustees of the American Medical Association has authorized a complete survey of all the medical schools of this country. Although the American Medical Association will undertake the entire financial responsibility for the survey, such a project can achieve the end of improved medical education in this country only as a collaborative effort with the Association of American Medical Colleges and the individual colleges. The aim of the survey will be that motivating every activity of the Council in the past: to improve medical education and to render all assistance to medical schools to improve themselves so that the quality of medical care in this country will continue to improve and the position of world leadership in medical education occupied by the schools of this country will be maintained and strengthened.

REPORT OF SUBCOMMITTEE ON ESTABLISHMENT OF MEDICAL CORPS IN VETERANS ADMINISTRATION

Father Schwitalla, chairman, said that the subcommittee had nothing new to report, but Colonel Mella requested that the subcommittee be continued so that if new problems should arise in the Veterans Administration's setup the subcommittee might be of assistance in solving them.

Discussion followed of the position of osteopaths in the Veterans Administration, participated in by Dr. Bierring, Colonel Mella, the Chairman, Miss Switzer and Dr. Draper.

RURAL MEDICAL SERVICE

The Chairman presented Dr. H. B. Mulholland, a member of the Committee on Rural Medical Service, who has taken the place on the Joint Committee of Dr. F. S. Crockett as a representative of the Committee on Rural Medical Service. Dr. Mulholland spoke as follows:

> The main efforts of the Committee on Rural Medical Service at the moment are directed toward the second annual National Conference on Rural Health, which is to be held in Chicago on February 7 and 8. It is expected that the conference will be well attended, more than 250 persons already having indicated their intention to be present.
>
> Virginia is now undertaking an investigation with reference to prepayment medical insurance for rural people. The rural people not only want the prosperous farmer covered but also the indigent.
>
> The Committee on Rural Medical Service is also concerned with the Hill-Burton Hospital Construction Act and its extension to rural people, and regional and state chairmen have been asked to contact the proper people in each state to see that rural people are on the committees in each state.
>
> Cooperatives have recently become numerous in the West. These groups are interested in medical care and the extension of medical care to rural areas. The Committee on Rural Medical Service feels that an attempt should be made to work out some plan with the cooperative groups for adequate rural medical care.

Dr. Mulholland's report was accepted with appreciation, and he was asked to present further information at the next meeting.

HEALTH AND PHYSICAL FITNESS PROJECT

Dr. Smiley gave the following report on the activity in the Physical Fitness Project now being conducted by the American Medical Association under the guidance of himself and Mr. Fred V. Hein:

> The Joint Committee on Health Problems in Education requested us to prepare material on three subjects: (*a*) Health Appraisal of the School Child, (*b*) Facts About Common Health Problems and (*c*) Cooperation in School Health Work. This material has been prepared and is now in the hands of the Joint Committee to be used in its work.
>
> Work in the field has included attendance on a rural life conference and a meeting of the State Physical Education Association in Arizona and a health education conference in Wisconsin; a survey of the Kenosha, Wis., public schools, and attendance on three teachers' institutes and one nurses' institute in Cook County, Ill.
>
> We have given assistance to Mr. J. W. Holloway Jr., Director of the Bureau of Legal Medicine and Legislation, in his study of the proposed National School Health Services Act, initiated and sponsored by *Parents' Magazine*. Mr. George J. Hecht of *Parents' Magazine* is chairman of a national committee working for the enactment of the act. This bill, if enacted, will provide assistance to the several states to enable them to establish and develop school health services for the prevention, diagnosis and treatment of physical and mental defects of school children.
>
> A conference on the cooperation of the physician in the school health and physical education program is being planned to be held Oct. 16 and 17, 1947.
>
> We are working closely with Dr. Harold R. Hennessey of the Council on Industrial Health, preparing health education material for the benefit of the C. I. O. - U. A. W. Institute of Health.
>
> Investigation is being made of the possibility of providing technical advice to the 35 mm. entertainment film producers who are planning a series of health shorts.

Miss Switzer said that the school health services bill has been under consideration for many months and, while it still is far from perfect, it represents a step forward in cooperative effort and areas of agreement. Dr. Bierring thought there is great expansive implication in the bill. He said that it assumes complete health care of school children up to 16 years of age, implies an infringement on the interests of at least 60,000 practitioners and places authority in the educational agencies of the state, and that the bill should receive very careful consideration and scrutiny. Miss Switzer thought that the latest plan was that it would be jointly operated by the health and education authorities and that the coordination would be effected by the head of the Federal Security Agency.

NAVY MEDICAL CORPS

Captain Eaton read excerpts from letters written by Reserve Corps medical officers complaining of not being allowed to resign and also that they are "not entitled to medical care." He stated that the remarks are not true, that of 618 resignations submitted only 218 are still pending, and that it is the intention to accept all resignations by the end of the fiscal year. He went on to say that a law had been passed which encouraged Naval Reserve officers to transfer to the regular service but that pressure is not being put on any one to do so and, if they do transfer, they go into the regular service without an examination of any kind and at the rank held in the Reserve but eventually they may be given or revert to a lower grade. Captain Eaton stated also that Navy, Army, Marine Corps, Public Health Service, Coast Guard or Veterans Administration personnel are admitted to navy hospitals and the Navy is required to give medical care to dependents. He said there is a total census of 3,802 medical officers in the Navy, which is insufficient to man all the stations adequately, especially in the hospitals.

MODEL HOSPITAL LICENSING LAW

Father Schwitalla told the Committee of a model hospital licensing law for the states, the first draft of which had been prepared by the American Hospital Association, which is being promoted by the Council of State Governments. He said the legislation is primarily a result of the enactment of the federal Hill-Burton Hospital Construction Act, which, while it does not specifically require the enactment of a state hospital licensing law, does require that a participating state must by July 1, 1948 enact legislation requiring that the maintenance and operation of hospital facilities financed in part by federal funds shall meet prescribed standards.

Dr. Sensenich remarked that the purpose or intent of the bill is highly desirable but thought that the matter of licensing an institution is a very important step and that perhaps there should be a conference of some kind covering the medical aspects of the bill. Dr. Lull said that the Director of the Bureau of Legal Medicine and Legislation and the Secretary of the Council on Medical Education and Hospitals of the American Medical Association have had the model bill under scrutiny. Father Schwitalla stated that the American Hospital Association is very active in its promotion.

PROFESSIONAL TRAINING IN THE ARMY MEDICAL CORPS

Col. George E. Armstrong of the Army Medical Corps, visiting a meeting of the Joint Committee for the first time, was introduced and spoke as follows:

> A professional training program for Army Medical Corps personnel was begun as of Jan. 1, 1947 and 175 men have been assigned to residencies in eight permanent army general hospitals. For the purpose of making these residencies acceptable to the various specialty boards, 250 certified specialists are acting as consultants.
>
> The regular Army Medical Corps is still depleted. As of today, Jan. 11, 1947, there are 1,131 officers in the regular establishment—less than before the war. Only 158 officers were integrated during 1946. The authorized strength, depending on legislation, will be between 2,150 and 2,750. A bill is being prepared which will provide means for more rapid promotion, revitalization of the Medical Corps by more strict attention to ways of getting rid of "dead wood," increased pay for specialists who are certified by specialty boards and some other things that it is thought will make the service more attractive. The bill is now in the process of being finally approved by the legislative section of the War Department, after which it is hoped to correlate it with the Navy.
>
> To date 47,100 physicians have been separated from the Army Medical Corps. About forty Medical Corps men are now in civilian hospitals or medical schools taking training, the largest number, perhaps, training in public health.

TIME AND PLACE OF NEXT MEETING

It was voted to hold the next meeting at American Medical Association Headquarters in Chicago at 10 a. m., Feb. 22, 1947.

The meeting adjourned at 1:25 p. m.

GENERAL REGULATIONS PROMULGATED UNDER FEDERAL HOSPITAL SURVEY AND CONSTRUCTION ACT

A Condensation Prepared by the Bureau of Legal Medicine and Legislation

As required by section 622 of the Federal Hospital Survey and Construction Act, general regulations have recently been promulgated by the Surgeon General of the United States Public Health Service with the approval of the Federal Hospital Council and the Administrator of the Federal Security Agency. They relate, in general, to (*a*) the number and distribution of general hospital beds required to provide adequate hospital service, (*b*) the number and distribution of beds required to provide adequate hospital services for tuberculous, mental and chronic disease patients, (*c*) the number and distribution of public health centers, (*d*) the general manner for determining priorities, (*e*) the general standards of construction and equipment of hospitals, (*f*) the availability of hospital facilities without discrimination on account of race, creed or color and (*g*) the general methods of administration of state plans.

Definitions.—Section 10.1 of the new regulations defines the term "hospital" to include public health centers and general, tuberculosis, mental, chronic disease and other types of hospitals and related facilities, such as laboratories, outpatient departments, nurses' home and training facilities, and central service facilities operated in connection with hospitals, but not institutions furnishing primarily domiciliary care. Except as applied generally to public health centers, the term "hospital" will be restricted to institutions providing community service for inpatient medical or surgical care of the sick or injured and obstetric care. The term will exclude federal hospitals and institutions found to constitute a public hazard.

A "public health center" is defined to mean a public facility utilized by a local health unit for the provision of public health services, including related facilities such as laboratories, clinics and administrative offices operated in connection with public health centers.

This section also indicates that "public health services" means services provided through organized community effort in an endeavor to prevent disease, prolong life and maintain a high degree of physical and mental efficiency. In addition to the services which the community already provides as a matter of practice, the term will include such additional services as the community from time to time may deem advisable to provide.

Other definitions contained in this section include, among others, the terms "base area," "intermediate area," "rural area," "general hospital," "chronic disease hospital," "mental hospital," "nonprofit hospital," "tuberculosis hospital," "hospital bed" and "local health unit."

Distribution of General Hospital Beds.—Sections 10.11 to 10.14 inclusive deal with the distribution of general hospital beds. The number of such beds required to provide adequate hospital service to the people residing in the state is declared to be (*a*) 4.5 beds per thousand of population in states having 12 or more persons per square mile, (*b*) 5 beds per thousand of population in states having less than 12 and more than 6 persons per square mile and (*c*) 5.5 beds per thousand in states having 6 persons or less per square mile.

The construction program under a state plan must provide for general hospital beds, existing and proposed, in each area within the state in accordance with the following standards: (*a*) in states having 12 or more persons per square mile, 2.5 beds per thousand of population in rural areas, 4.0 beds per thousand in intermediate areas and 4.5 beds per thousand in base areas; (*b*) in states having less than 12 but more than 6 persons per square mile, 3 beds per thousand of population in rural areas, 4.5 beds per thousand in intermediate areas and 5 beds per thousand in base areas, and (*c*) in states having 6 or less persons per square mile 3.5 beds per thousand of population in rural areas, 5.0 beds per thousand in intermediate areas and 5.5 beds per thousand in base areas.

Distribution of Tuberculosis, Mental and Chronic Disease Hospital Beds.—The number of beds required to provide adequate hospital services for tuberculous patients, mental patients and chronic disease patients in any state is declared to be, (*a*) for tuberculous patients, 2.5 times the average annual deaths from tuberculosis in the state over the period of five years from 1940 to 1944 inclusive, (*b*) for mental patients 5 per thousand of population and (*c*) for chronic disease patients 2 per thousand of population.

Wherever practicable, tuberculosis, mental and chronic disease hospitals will be built in centers of population and in proximity to general hospitals.

Distribution of Public Health Centers.—The number of public health centers in a state, counting those existing as well as those provided with federal aid under the Survey and Construction Act, may not exceed 1 per 30,000 of state population except that in states having less than 12 persons per square mile the number may not exceed 1 per 20,000. In the count of public health centers, however, the following will be excluded: (*a*) existing facilities which the state agency, after consultation with the state health authority, has determined to be unsuitable for use as public health centers and (*b*) auxiliary facilities such as laboratories and clinics, whether existing or proposed, and whether they are located within the same structure as the health department office or in a separate structure.

The general method of distribution of public health centers throughout the state must conform to the plan of organization of local health units within the state.

Priority of Projects.—Sections 10.41 to 10.47 inclusive indicate the general rules to be observed in establishing priorities. With respect to public health centers, highest priority must be given to the provision of facilities for local health units serving the rural commmunities and areas with relatively small financial resources.

General Standards of Construction and Equipment.—Appended to the regulations is appendix A, which sets forth the general standards of construction and equipment that have been developed by the Surgeon General of the United States Public Health Service. The regulations require the state agency to adopt general standards of construction and equipment for the various types of hospitals and health centers assisted under the program and that such standards shall not be less than the general standards set forth in appendix A. The minimum standards that have been set up for public health centers are as follows:

(B-8). Public Health Centers.

Administration.—Where health department administration personnel has no offices in health center: waiting room, public toilets, office for public health nurses, staff toilets. Assembly space: waiting room may be used for this purpose where health centers serve under 30,000 population. Where health department administration offices are provided in health centers, add health officer's office, office for sanitary engineers, health education office, staff room and library in health center for over 30,000 population.

Clinical.—The clinical services, and extent of such services, provided in the health center will depend on the program contemplated by the health department to take care adequately of the particular needs of the population served by the health center. For populations up to 30,000, two examination rooms for maternal and child health, venereal disease and tuberculosis clinics, consultation room, utility room and dental room. For populations over 30,000, if the following services are provided, they shall include areas noted as follows: Maternal and child health: demonstration room, examining room, toilet. Tuberculosis and X-Ray: X-ray room with dressing booths, dark room, consultation and viewing room. Venereal disease: examination room, treatment room, consultation room, toilet. Dental: two dental chairs, small dental laboratory. Pharmacy: Dispensing room.

Laboratory.—The volume and type of laboratory tests in the health center will vary with local conditions and will determine the size of the laboratory. Such factors as density of population, area to be served, type of center (municipal, county or rural), its use as a branch of the state laboratory and availability of other laboratory facilities must be considered. One room is required for urinalysis, hematology and dark field examinations for syphilis and storage of biologic products furnished by the state health department. Where food control, sanitation and communicable disease work is contemplated, another room shall be furnished for this purpose.

Service.—General storage areas: bulk office and janitors' supplies, bulk clinical supplies, educational material. Storage closets: office supplies, medical supplies, educational material. Janitors' closet: centrally located. Heating plant.

The regulations provide that application for construction of a psychopathic hospital with a capacity of more than 500 beds or of a mental hospital with a capacity of more than 3,000 beds shall not be approved. Similarly, application for construction of a tuberculosis hospital with a capacity of less than 100 beds will not be approved, except that an application for construction of a tuberculosis hospital with a capacity of 50 to 100 beds may be approved when necessary to provide facilities for an isolated area too small to support a larger hospital.

Nondiscrimination and Hospital Services for Persons Unable to Pay Therefor.—A state plan must provide for adequate hospital facilities for the people residing in a state without discrimination on account of race, creed or color and must provide for adequate hospital facilities for persons unable to pay therefor. Before a construction application may be recommended by a state agency for approval, assurance must be obtained from the applicant that the facilities to be built will be made available without such discrimination. In any area, however, where separate hospital facilities are provided for separate population groups, the state agency may waive this requirement if (*a*) it finds that the plan otherwise makes equitable provision on the basis of need for facilities and services of like quality for each such population group in the area and (*b*) such finding is subsequently approved by the Surgeon General.

Similar assurance must be received by the state agency that the applicant will furnish a reasonable volume of free patient care, defined to mean hospital service offered below cost or free to "persons unable to pay therefor," both the legally indigent and persons who are otherwise self supporting but are unable to pay the full cost of the hospital care.

Methods of Administration of a State Plan.—The concluding sections of the regulations indicate the manner in which state hospital construction programs are to be developed and how construction applications are to be processed.

Washington Letter

(From a Special Correspondent)

March 28, 1947.

Senator Taft Asks Billion Dollar Budget for Social Welfare

Senator Taft, Republican of Ohio, told the Senate Banking Committee that "it is no more socialistic to provide government assistance to furnish housing than it is to give free medical care, as they do in every general hospital." Senator Taft testified on the long term housing bill he introduced with Democratic Senators Wagner of New York and Ellender of Louisiana. He asserted that the government could afford to spend $1,000,000,000 annually for social welfare programs in health, housing and education. Mr. Taft said he would like to see the federal budget cut to $28,000,000,000 in fiscal 1949 and to $25,000,000,000 in fiscal 1950. He said the $1,000,000,000 social welfare budget would not be too large with a reduced overall federal budget.

House Approves Permanent Army and Navy Nurse Corps

The House of Representatives has passed legislation to establish permanent nurse corps for the Army and Navy. The bill sponsored by Representative Smith, Republican of Maine, was passed without objection after an anti-race discrimination amendment offered by Representative Powell, Democrat of New York, was defeated by a standing vote of 187 to 47. Mr. Smith said that the amendment by Powell, one of two Negro House members, was unnecessary because the Navy no longer discriminated against Negroes and now has Negro nurses.

Reports of Alarming Spread of Tuberculosis in Europe

Dr. Arnold P. Meiklejohn, senior nutrition consultant in the United Nations Relief and Rehabilitation Administration's European office, told a Washington news conference that an alarming increase in tuberculosis has made it Europe's most severe infectious disease. He estimated the overall death rate from tuberculosis now to be at least twice the prewar level and in some places much higher. There is widespread underfeeding in Europe and an increase in infant mortality. UNRRA, he said, has nevertheless been able to avert three major famines in Greece, Yugoslavia and Austria.

Campaign on Lemke Antivivisection Bill Renewed

The newspaper campaign in favor of the Lemke bill to forbid vivisection of dogs in the District of Columbia has been renewed by a publication favoring such legislation. Representative Miller, Republican of Nebraska, chairman of the House District of Columbia subcommittee on health and education, predicted action on the bill shortly. Committee members accompanied by reporters and photographers recently toured medical laboratories here.

First Survey of Cancer Cases in District of Columbia Area

A comprehensive cancer control program for the District of Columbia is expected to result from the overall survey of cancer cases which was launched this week. Informational blanks have been mailed to all local doctors and hospital heads to ascertain how many District of Columbia residents are under treatment or observation for cancer. The survey will use methods similar to those used in Atlanta, New Orleans, San Francisco, Dallas, Philadelphia and other large cities.

Dr. Marchetti Takes over Combined Georgetown Departments of Obstetrics and Gynecology

Dr. A. A. Marchetti, associate professor at Cornell University Medical School, is to take charge of the combined departments of obstetrics and gynecology of Georgetown University Medical School on July 1. The two former part time department heads who are retiring July 1 are Dr. J. J. Mundell, obstetrics, and Dr. Leon A. Martel, gynecology. Dr. Marchetti was born in Richmond, Va., and graduated from the University of Richmond and Johns Hopkins University.

Veterans Seeking Medical Care Urged to Identify Themselves

Ex-service people applying at Veterans Administration regional offices for medical treatment, hospitalization or care in a VA home should take along needed identifying documents in order to assure speedy, efficient service for themselves. Officials explain that many veterans daily applying for hospital or medical care appear without necessary identification.

Medical Legislation

STATE LEGISLATION

Delaware

Bills Introduced.—H. 222 proposes to authorize the mayor and council of New Castle to levy **occupational taxes** on business and professions carried on within the city. S. 285 **proposes to require every physician** to submit to an annual examination and test for venereal disease and to display a certificate showing the results of such examination in a prominent place in his office. S. 305 proposes to authorize the use in any criminal prosecution relating to **driving a motor vehicle** under the influence of intoxicating liquor of a chemical analysis of the defendant's blood. S. 341 proposes to make it unlawful for any person to teach or disseminate any information whatsoever or doctrine or principle relating to **artificial control of birth** of human beings.

Idaho

Bills Passed.—H. 219 passed the house March 4 It proposes an enabling act for the formation and **regulation of nonprofit corporations** organized to render medical, surgical and / or hospital service on a membership fee plan. S. 102 passed the house March 3. It proposes an enactment of a state **hospital survey and construction act** requiring a statewide survey of hospital facilities and the preparation of a program for the construction of additional facilities. The proposal would also require the appointment of an advisory hospital council and would authorize the commissioner of the state department of public health to apply for and accept federal funds to assist the state in survey and construction activities.

Bills Enacted.—H. 141 has become chapter 167 of the Laws of 1947. It **adds cancer** to the list of diseases which a physician must immediately report to the department of public health. H. 144 was approved March 10. It limits the **sale of barbituric acid** or compounds to sale on a prescription signed by a person licensed to prescribe or administer barbiturates. S. 54 has become chapter 132 of the Laws of 1947. It repeals the existing law relating to the licensing of **lying-in hospitals.** S. 55 has become chapter 133 of the Laws of 1947. It provides for the licensing, inspecting and **regulating of all hospitals** within the state.

Illinois

Bill Introduced.—H. 183 proposes to authorize each county in the state to levy a **tax for the treatment** and care of persons afflicted with poliomyelitis and authorizes the appointment within each county which levies such tax of a board to arrange for the necessary care and treatment of persons so afflicted by contract with public and private hospitals in the state.

Indiana

Bills Enacted.—S. 1 has become chapter 173 of the Laws of 1947 To amend the law relating to **hospital surveys,** it appoints the state board of health as the state agency to cooperate with the federal government in the construction of hospitals within the state and adds to the hospital survey law a new section defining the terms "hospital," "public health center" and "nonprofit hospital." S. 212 has become chapter 253 of the Laws of 1947. It amends the medical practice act by authorizing the board of medical examiners to grade questions given by the **National Board of Medical Examiners** and to accept examinations certified by the National Board as the examination given to the applicant. This enables an applicant to be licensed in Indiana without having to wait until the regular examination given by the Indiana board occurs. S. 213 has become chapter 254 of the Laws of 1947. It provides for the **annual registration** of all persons holding an unrevoked license to practice the healing art in any form or manner.

Iowa

Bills Introduced.—H. 431 proposes to authorize any peace officer to take a blood, urine, breath or body substance **test to determine intoxication** of any person under arrest for any crime in which the issue of intoxication may arise and to admit the results of such tests in evidence in court hearings. The proposal would further provide that the test specimen for analysis may be taken irrespective of the want of consent of the person under arrest, and the doctor-patient privilege shall not be applicable to giving evidence of the test in court. H. 465 proposes a hospital licensing law.

Montana

Bills Enacted.—H. 235 has become chapter 269 of the Laws of 1947. It provides for the licensing and **regulating of hospitals** within the state and prohibits the discrimination between the patients of any licensed physician on the ground that the physician is not a member of the medical or surgical staff of the hospital. It exempts from its terms Christian science institutions. H. 236 has become chapter 270 of the Laws of 1947. It is the Montana **Hospital Survey and Construction Act,** requiring a survey of hospital and health facilities in the state, a program of construction for additional needed facilities, the appointment of an advisory hospital council and the necessary cooperation for the receiving of federal funds to aid in the construction of such additional needed facilities as the program may require. H. 314 has become chapter 192 of the Laws of 1947. It provides for the licensing and **regulating of boarding homes** or nursing homes for the aged. S. 100 has become chapter 208 of the Laws of 1947. It provides that each **applicant for a marriage license** shall present a certificate signed by a duly qualified physician licensed to practice medicine and surgery in any state or United States territory or any person authorized by the laws of Montana to make such certificate certifying that the applicant has been given an examination for the discovery of syphilis.

Nebraska

Bill Introduced.—Bill No. 408 was previously reported as proposing to amend the section of the medical practice act referring to examinations so as to **exempt chiropractors** therefrom. This was an error. The proposal, actually, is to exempt chiropractors from the provisions of the basic science act.

Bill Passed.—Bill No. 160 passed the legislature March 6. It proposes the enactment of a state **hospital survey and construction act** which would require the department of health to make an inventory of existing hospitals and to develop and administer a state plan for the construction of necessary additional hospitals. The proposal would also provide for compliance with the requirements of the federal hospital survey and construction act and regulations thereunder.

Nevada

Bills Introduced.—A. 160 proposes the enactment of a **basic science law** requiring all persons desiring to be licensed to practice the healing art or any branch thereof to obtain first a certificate of ability in anatomy, physiology, chemistry, bacteriology and pathology. A. 185 proposes to require each applicant for a **marriage license** to file a certificate executed by a duly licensed physician stating that such applicant is free from syphilis in a communicable stage. A. 199 proposes the enactment of a hospital licensing law.

Bill Passed.—S. 55 passed the senate March 5. To amend the medical practice act, it proposes to authorize the state board of medical examiners, in its discretion, to issue permits to any properly qualified applicant **to serve as resident medical officer** in any hospital in Nevada subject to certain provisions. Such temporary licentiate would be authorized to practice medicine only within the confines of the hospital specified in his permit and the permit would in no case be in excess of one year, renewable at the discretion of the board of medical examiners.

New Jersey

Bill Introduced.—A. 220 proposes the creation of a New Jersey **state board of naturopathic examiners** and defines naturopathy as "the prevention, diagnosis and treatment of human ailments and diseases by means of any one or more of the psychological, physical or mechanical, chemical or material forces of nature, excluding drugs, surgery or other artificial measures." The proposal would authorize licentiates to "have the authority to examine patients, diagnose and treat by natural agencies any disease pain, injury, deficiency, deformity ailment or physical or mental condition and to prescribe and regulate the patient's dietary, sanitary and hygienic requirements, also use the x-ray and any other instrument for the purpose of diagnosing, analyzing and determining the patient's ailment, . . .'

New Mexico

Bills Introduced—S 160 proposes the enactment of a **hospital licensing law** S 246, to amend the **workmen's compensation act**, proposes to authorize an employer or insurer to be entitled to have a physical examination of any claimant by a physician of his own choice subject to the furnishing of reports subject to the requirement that the physician be qualified to practice medicine under the laws of this state or the state wherein the claimant resides and subject to certain other requirements .

Bills Enacted—S 51 was approved March 12 It **defines a clinic** as an establishment where patients are admitted for special study and treatment by a group of physicians practicing together and provides that no person or group of persons shall use the word clinic in connection with any establishment or office which does not come within such definition S 52 was approved March 12 It requires all **persons licensed to practice** any of the healing arts to designate clearly the school of medicine or practice which such person is licensed to engage in and provides that failure to comply with such restriction shall constitute unprofessional conduct

New York

Bills Introduced—A 2012 and S 1839 propose the creation of a **state board of chiropractic examiners** and define chiropractic as 'the science of locating and the removing of nerve interference in the human body, according to chiropractic principles, where such interference is *the result of or caused by misalignment or subluxations of the vertebral* column It excludes operative surgery, the reduction of fractures the prescription or use of drugs or medicine and the practice of obstetrics" A 2305 proposes the creation of a **board of massage examiners** and defines massage as 'the stroking kneading tapping or rolling with the hands, or with other instrumentalities of the human body for hygienic or remedial purposes for the purposes of relieving, alleviating or reducing affected parts thereof but shall not include reduction of a fracture or dislocation of a bone"

Bill Passed—S 1904 passed the senate March 4 To amend the penal law with respect to **animal experimentation**, it proposes to eliminate therefrom the existing exception in favor of experiments performed under the authority of the faculty of some regularly incorporated medical college or university of the state Under the proposal such institutions would also have to obtain approval from the state commissioner of health prior to conducting any experiments

Oklahoma

Bill Introduced—S 145 proposes the creation of a **board of examiners for naturopathy** and defines naturopathy as "the diagnosis and practice of physiological and material sciences of healing, as defined by an Act of Congress approved February 7, 1931, as follows The physiological and mechanical sciences such as mechanotherapy, articular manipulation corrective orthopedic gymnastics neurotherapy, psychotherapy, hydrotherapy and mineral baths electrotherapy, thermotherapy, phototherapy chromotherapy, vibrotherapy, thalamotherapy and dietetics which shall include the use of foods of such biochemical tissue-building products and cell salts as are found in the normal body, and the use of vegetable oils and dehydrated and pulverized fruits flowers seeds barks roots and vegetables uncompounded and in their natural state, and, added to the above definition will include all methods now in use, as physiotherapy, Indian Herb, Herb and Simple Remedy doctoring physical culture, gynocology, autobiochemistry, colonic therapy and scientific massage and such *methods as are taught in standard schools* of Naturopathy"

South Dakota

Bills Enacted—H 50 was approved March 8 It is a South Dakota **hospital survey and construction act** Among other things this law requires any institution accepting federal funds for construction purposes to agree first that it will not discriminate between practitioners of the various healing arts and every duly licensed doctor of medicine, osteopathic physician and chiropractor shall have the right to and shall be entitled to practice his profession in any such hospital which has received federal funds H 302 was approved March 5 It **amends the basic science act** by exempting therefrom any one who has served as a medical officer in World War II S 184 was approved March 10 It prohibits the **sale of barbiturates** *except on the original prescription* of a practitioner, defined as a person licensed by law to prescribe and administer barbiturates

Official Notes

TELEVISION BROADCASTS

The following American Medical Association programs have been scheduled for presentation over television station WBKB, Chicago, on the indicated dates

April 10	Deafness and Hearing Aids Dr Francis Lederer and Dr H Koepp Baker
April 24	Centennial of A M A Progress in Health Education Dr W W Bauer
May 8	Heart Operations Dr Willis J Potts

Coming Medical Meetings

Alabama, Medical Association of the State of, Birmingham, April 14 16 Dr Douglas L Cannon, 519 Dexter Ave, Montgomery 4, Secretary.

American Association for the Study of Goiter, Atlanta, Ga April 3 5 Dr Thomas C Davison, 478 Peachtree St, N E Atlanta 3 Secretary

American Association of Anatomists Montreal, Canada, April 3 5 Dr. Normand L Hoerr, 2109 Adelbert Road Cleveland 6, Secretary

American Association of Industrial Physicians and Surgeons, Buffalo, N Y, Statler Hotel, April 26 May 4 Dr Frederick W Slobe, 28 L *Jackson Blvd*, Chicago 4 Secretary

American Association of Pathologists and Bacteriologists Chicago, May 16 17 Dr Howard T Karsner, 2085 Adelbert Road Cleveland 6, Secretary

American *College of* Physicians, Chicago April *28 May 2* Mr E R Loveland 4200 Pine St, Philadelphia 4, Secretary

American Laryngological Association, St Louis April 23 24 Dr Arthur W Proe [illegible] St Louis 8, Secretary

American [illegible] and Otological Society, St Louis, April 2[illegible] 288 Alexander St Rochester 7, N Y Secretary

American Otological Society, St Louis, April 21 22 Dr Gordon D Hoople, 713 E Genesee St Syracuse 2 N Y Secretary

American Pediatric Society Stockbridge, Mass, May 13 15 Dr Henry G Poncher, 1819 W Polk St, Chicago 12, Secretary

American Physiological Society, Chicago May 18 22 Dr Maurice Visscher, University of Minnesota, Minneapolis Secretary

American Society for Clinical Investigation, Atlantic City Chalfonte Haddon Hall May 5 Dr Eugene A Stead Jr, Grady Hospital, Atlanta 3 Georgia, Secretary

American Society for Pharmacology and Experimental Therapeutics Chicago, May 18 22 Dr Harvey B Haag Medical College of Virginia Richmond 19, Va, Secretary

American Society for Research in Psychosomatic Problems, Atlantic City, May 3 4 Dr Edwin G Zabriskie, 714 Madison Ave, New York 21, Secretary

Arizona State Medical Association Tucson, May 7 10 Dr Frank J Milloy, 112 N Central Ave, Phoenix Secretary

Arkansas Medical Society, Little Rock April 17 19 Dr William R Brooksher, 602 Garrison Ave Fort Smith Secretary

Association of American Physicians, Atlantic City, May 6-7 Dr Joseph T Wearn Lakeside Hospital, Cleveland 6, Secretary

California Medical Association, Los Angeles, Hotel Biltmore April 30 May 3 Dr L Henry Garland, 450 Sutter St, San Francisco 8, Secretary

Connecticut State Medical Society, New Haven, April 28 30 Dr Creighton Barker, 258 Church St New Haven 10, Secretary

Federation of American Societies for Experimental Biology Chicago, May 18 22 Dr William H Chambers, 1300 York Ave, New York 21, Secretary

Florida Medical Association, Miami April 20 23 Dr Robert B McIver, P O Box 1018, Jacksonville Secretary

Georgia *Medical Association of*, Augusta, *Bon Air Hotel, April 22 25* Dr Edgar D Shanks 478 Peachtree St N E, Atlanta Secretary

Hawaii Territorial Medical Association, Lihue, Kauai, May 1 4 Dr. Harry L Arnold Jr, 510 S Beretania St Honolulu 53, Secretary

Illinois State Medical Society Chicago Palmer House, May 12 14 Dr Harold M Camp, 224 S Main St Monmouth Secretary

Iowa State Medical Society, Des Moines, April 16 18 Dr John C Parsons, 406 Sixth Ave Des Moines 9 Secretary

Kansas Medical Society, Topeka, May 12 15 Dr John M Porter, 512 New England Bldg, Topeka, Secretary

Louisiana State Medical Society, New Orleans May 12 14 Dr P T Talbot, 1430 Tulane Ave, New Orleans 13, Secretary

Louisiana Mississippi Ophthalmological and Otolaryngological Society, Biloxi Miss Buena Vista Hotel, May 5 Dr Edley H Jones, 1301 Washington St, Vicksburg, Miss Secretary

Maryland, Medical and Chirurgical Faculty of, Baltimore, April 22 23 Dr W Houston Toulson, 1211 Cathedral St, Baltimore 29, Secretary.

Massachusetts Medical Society, Boston, Hotel Statler, May 20 22 Dr Michael A Tighe, 8 Fenway, Boston 15, Secretary

Mississippi State Medical Association Biloxi May 6 8 Dr T. M Dye, Box 295, Clarksdale, Secretary

Missouri State Medical Association Kansas City, March 30 April 2 Mr Thomas R O Brien, 634 N Grand Blvd, St Louis 3, Executive Secretary

Nebraska State Medical Association, Omaha, April 28 May 1 Dr. R. B Adams, 416 Federal Securities Bldg, Lincoln 8, Secretary

New Jersey, Medical Society of Atlantic City, Haddon Hall April 22 24. Dr Alfred Stahl, 160 Lincoln Ave, Newark 4, Secretary

New England Diabetes Association Boston City Hospital, April 16 Dr James H Townsend, 330 Mt Auburn St, Cambridge, Mass, Secretary

New Mexico Medical Society, Albuquerque April 30 May 3 Dr H L January, 221 West Central Ave, Albuquerque, Secretary

New York, Medical Society of the State of, Buffalo May 5 9 Dr Walter P Anderton, 292 Madison Avenue, New York 19, Secretary

North Carolina Medical Society of the State of, Virginia Beach, Va, Cavalier Hotel May 12 14 Dr Roscoe D McMillan P O Box 232, Red Springs, Secretary

Northern Tri State Medical Association Detroit April 8 Dr John L. Stifel 232 Michigan St Toledo 2 Ohio, Secretary

Ohio State Medical Association, Cleveland, May 6 8 Mr Charles S Nelson, 79 E State St, Columbus 15 Executive Secretary

Oklahoma State Medical Association, Tulsa, Mayo Hotel, May 14-16 Mr R H Graham *210* Plaza Court Bldg, Oklahoma City, Executive Secretary

Rhode Island Medical Society, Providence, May 14-15 Dr Morgan Cutts, 106 Francis St Providence 3, Secretary

Society of American Bacteriologists, *Philadelphia* May 13 16 Dr Leland W Parr, 1335 H St N W, Washington 5 D C Secretary

Southwest Allergy Forum Shreveport, La, March 31 April 1 Dr. Sim Hulsey, 505 Medical Arts Bldg Fort Worth, Texas, Secretary

Tennessee State Medical Association, Memphis, April 8-10 Dr W. M. Hardy, 706 Church St Nashville 3, Secretary

Texas, State Medical Association of, Dallas, Adolphus Hotel, May 5 8 Dr Holman Taylor, 1404 W El Paso St, Fort Worth 3, Secretary

United States Mexico Border Public Health Association, San Diego, California and Tijuana, Mexico, May 6 8 Dr James A Grider Jr, 151 U S Court House, El Paso Texas Secretary

West Virginia Medical Association, Charleston, May 12 14 Mr Charles Lively, 1031 Quarrier St, Charleston 24, Secretary

GOVERNMENT SERVICES

ARMY

RESEARCH IN MILITARY MEDICINE

The War Department has announced details of its plans for military medicine in its research and development program for 1947:

In order for progress to continue, it is essential that further research be carried out in all the present research fields and that special emphasis be placed on:

Traumatic surgery. Great progress has been made in this important field during the war years. The Army offers unusual opportunity for further research in this most important field of surgery.

Psychoneurosis. This field offers great promise in research and possible saving of great manpower losses to the Army. There were 642,351 cases of psychoneurosis in the Army during the past war, representing a tremendous manpower saving if methods for reducing the numbers of these cases can be developed.

Radiation casualties. The relationship of projects dealing with atomic energy and medical problems related thereto must be established in order to afford the Medical Department opportunity to determine treatment methods for both the acute and the chronic effects, to study the chronic pathologic conditions following radiation and to determine protective methods. Preliminary work in this line is now being carried out.

Cold weather operations. The fact that 50,000 casualties due to cold were suffered in one year in the past war is adequate proof that further research is necessary. A great deal of research in physiology, chemistry and pathology is needed in this field. The Quartermaster Corps shares in this important research field in the development of cold weather clothing and other protective equipment.

Special disease problems. This includes research in prevention, control and treatment of such conditions as respiratory infections, intestinal disease, infectious hepatitis, malaria, plague and venereal disease.

Antibiotics. Research must be continued for the development of new agents such as penicillin and streptomycin and for improved methods for the use of such agents.

Immunization. Efforts to find new or improve present immunizing agents should be continued. In addition, a great deal of research is necessary in the field of natural immunity and its development.

Physical standards. A considerable amount of research should be directed toward proper evaluation of physical standards for certain types of work. This may well result in a great reduction of arbitrary manpower loss because of minor physical deficiencies.

Wound ballistics. Research should be continued in order to evaluate properly types of wounds produced, their treatment and causes of remote trauma.

Medical equipment. The development of improved means of offering the best medical care to the soldier in the field is a never ending research project.

Medical and surgical practice. There are numerous unsolved problems in the prevention, control and treatment of many medical and surgical diseases. Owing to the military control exercised over patients, the Army has a great opportunity to carry out extensive studies in this direction.

AVIATION MEDICINE

Many research projects must be carried out in order to keep abreast of engineering developments and to determine the maximum performance of average men so that this may be used as a baseline for designing engineers to work from. Some of the more important categories of research in aviation medicine are:

Safety and survival methods and devices. Research in this broad and important field includes projects on various types of oxygen masks and their accessories, projects on various types of life vests, life rafts, radio and other signal devices, distillation apparatus, fishing equipment and devices to detect radioactivity.

Escape mechanisms and methods. Many important projects are being carried out on escape from high speed and high altitude airplanes, including ejector type seats, pressurized suits and oxygen masks.

Acceleration and deceleration and gravity. In this broad category research is being carried out on the effects of acceleration and deceleration of the body in various positions, on the development of antigravity mechanisms and devices, and on the effects of gravity on the human body.

Physiology. Important research projects in the physiology of anoxia, resuscitation, high altitude flying and high speed flying must be continued.

Heat and cold. The human tolerance to heat and cold in various situations and environments is being carried out in certain projects. This is similar to many studies carried out for the Army ground forces by the Surgeon General at Fort Knox, Kentucky.

Psychology. In this most important field research is being carried out on the psychologic factors involved in aircraft control instruments, in legibility of indicators, in speed of comprehension of instrument panels, in reaction to blind flying and many others.

Radiation effects. The Air Surgeon and the Surgeon General have very broad interests in this field. The Air Surgeon is especially interested in the field of instrumentation for the detection of radioactivity at high speeds, high altitudes and low temperatures. Research must be done for the protection of personnel in flight when fission clouds are encountered.

ASSIGNMENT OF PRIMARY COGNIZANCE

Primary cognizance in the field of military medicine is assigned to the Surgeon General. Responsibility for those phases which are peculiarly applicable to the problem of flight is assigned to the commanding general, Army Air Forces.

ARMY AWARDS AND COMMENDATIONS

Colonel John I. Brewer

The Legion of Merit has been awarded to Col. John I. Brewer, M. C., A. U. S., Chicago, for service with the Army Air Forces Convalescent Center, Buckley Field, Colorado, from January 1944 to May 1944 and headquarters, Army Air Force Personnel Distribution Command, from February 1945 to October 1945. He organized and directed the facilities for rehabilitation and convalescent care of the disabled and hospitalized personnel of the Army Air Forces in which activities, said the citation, his initiative, foresight and administrative skill were largely responsible for the success of that program. Dr. Brewer graduated from Rush Medical College in 1928 and entered military service July 17, 1942.

Captain Richard G. Hodges

The Legion of Merit has been awarded to Capt. Richard G. Hodges, M. C., A. U. S., of Cleveland, who as director of pneumonia research and epidemiologist, Sioux Falls Army Air Field, during the period from July 8, 1943 to Oct. 1, 1945. Captain Hodges conducted an investigation of the prevention of pneumococcic pneumonia which led to the unequivocal proof that pneumonia vaccination is feasible. The citation made note of the fact that Captain Hodges' distinctly meritorious contribution to medical science reflects great credit on himself and on the armed forces of the United States. Dr. Hodges graduated from Harvard Medical School in 1936 and entered military service on Dec. 31, 1942.

NAVY

NAVY AWARDS AND COMMENDATIONS

Commander Richard D. Anderson

The Navy Commendation Ribbon was recently awarded to Commander Richard D. Anderson (MC), U.S.N.R., of Burlington, N. J. The citation signed by Admiral H. K. Hewitt was as follows: "As senior medical officer you carried out your duties in a cool and competent manner under intermittent enemy shell fire during the first week of the Normandy invasion in June 1944 and thereafter under sporadic night enemy bombing. Landing first at Omaha Beach on D plus 2, you cared for the wounded after the unusually heavy bombing of that night. Arriving at Utah Beach the following day you immediately organized their medical care in addition to assisting at a nearby army hospital in caring for both Army and Navy wounded. By your efforts and diligence you were responsible for preventing the spread of disease and by your professional skill aided in reducing the number of fatalities. I commend you for splendid devotion to duty and outstanding professional ability under fire, which reflect credit on yourself and on the United States Naval Service." Dr. Anderson graduated from the University of Virginia in 1917 and entered the military service April 21, 1942.

Dr. James Edgar Paullin

The President of the United States recently awarded the Medal for Merit to Dr. James Edgar Paullin of Atlanta, Ga. The citation signed by President Truman specifies exceptionally meritorious conduct in the performance of outstanding services to the United States since 1943 and explains that Dr. Paullin served as honorary consultant to the Bureau of Medicine and Surgery of the Navy Department while also serving as a member of the directing board of the Procurement and Assignment Service of the War Manpower Commission during a period when the solution of problems of vital importance to the successful conclusion of the war required the intensive and unremitting efforts of all concerned. By his self sacrifice and the employment of his high professional prestige, his talents as a physician and surgeon, and his abilities for successful organization of professional groups, he rendered the most responsible, notable and distinguished service. To the Navy directly, through his contributions as honorary consultant, and to all of the armed services through his achievements with the War Manpower Commission, Dr. Paullin's advice and direction were of exceptional and invaluable aid and assistance.

MISCELLANEOUS

PHYSICIANS WANTED FOR CIVIL SERVICE

The U. S. Civil Service Commission has announced an examination for filing medical officer positions. These positions are located in various federal agencies, in Washington, D. C., in the U. S. Public Health Service and the Indian Service throughout the United States and in the Panama Canal Zone. Salaries range from $4,149 to $5,905 a year, with higher salary rates for the Canal Zone positions. No written test will be given. To qualify, all applicants must be graduates of a medical school of recognized standing and must also meet other requirements, which include experience and training in the field of medicine. The age limits are 45 years for Panama Canal Zone positions and 62 years for other positions. These age limits are waived for persons entitled to veteran preference (up to the age of 62 for the Panama Canal Zone Service and without limitation for other agencies). Interested persons may secure information and application forms from most first and second class post offices, from Civil Service regional offices or from the U. S. Civil Service Commission, Washington 25, D.C. Applications must be filed not later than April 22, 1947.

SALE OF SURPLUS TRANSFUSION SETS

About 140,000 sets of blood transfusions apparatus, acquired by the army at a cost of about $125,000, will be offered for sale as surplus on a competitive bid basis. Bids will be accepted by the War Assets Administration regional offices holding inventories, New York, Chicago and San Francisco, from April 10 to April 30.

The sets are unused army field models of the indirect recipient type designed to be used once and then destroyed. Each set consists of a sealed-in metal tube with glass filter housing, metal filter, a 3½ foot length of rubber tubing, an 18 gage, 1½ inch recipient needle and a 17 gage 1½ inch airway cannula needle. Use of this apparatus requires a donor set or a supply of blood as in a blood bank for complete transfusions.

Samples may be inspected at regional offices holding inventories. The New York City region has 65,952 sets, Chicago 44,900 and San Francisco 28,224. Priority claimants, such as state health agencies, may submit letters of intent to buy. All levels of trade, including hospital supply houses, manufacturers and exporters, are invited to submit bids for part or the entire lot in each region.

SALE OF SURPLUS DRUGS

Offerings consisting of $300,000 worth of surplus chemicals and pharmaceuticals, $180,000 worth of parenteral solutions and $150,000 worth of Sulfasuxidine (succinylsulfathiazole) tablets are announced by the War Assets Administration.

All three offerings are at fixed prices f. o. b. location of inventories. The chemicals and pharmaceuticals are located in Cincinnati, Denver, Louisville, New York, Richmond, San Francisco and St. Louis. Sulfasuxidine inventories are in San Francisco and St. Louis. Orders for any of the items should be sent in duplicate to the Director, Medical Sales Division, War Assets Administration, Washington 25, D. C. Complete descriptions and price listings may be obtained on request to the same address.

The chemicals and pharmaceuticals include mercury bichloride tablets in bottles of 250 each; protein silver, mild and strong, 4.6 grain, in bottles of 100; iodine crystals in ¼ pound bottles; glyceryl trinitrate 1/400 grain hypo in tubes of 20 units. The Sulfasuxidine tablets, 7.7 grains, are packaged 1,000 to the bottle.

The chemicals, pharmaceuticals and Sulfasuxidine tablets are being offered concurrently to priority claimants and other buyers. Ten per cent of the Sulfasuxidine tablets have been reserved to fill federal agency orders received by 5 p. m. March 24; 10 per cent of the chemicals and pharmaceuticals have been reserved for federal agency orders received by 5 p. m. March 25. Other orders for these items received by the same dates will be filled in the following sequence: (1) certified veterans of World War II; (2) other priority claimants in the usual sequence; (3) other buyers. In addition, orders received later will be filled without regard to priorities.

The parenteral solutions include sodium citrate in ampules, vials and bottles, sodium cacodylate 1 grain ampules and caffeine with sodium benzoate in ampules. All have been passed by the Food and Drug Administration and are offered at less than acquisition cost to all levels of trade, including exporters. This offering will close March 25. Inventory is located in St. Louis, New York, Cincinnati, Atlanta, Ga., Richmond, Va., and Louisville, Ky.

PHYSICIANS SEPARATED FROM SERVICE

ARMY MEDICAL CORPS OFFICERS RECOMMENDED FOR/OR RELIEVED FROM ACTIVE DUTY

Alabama

Climo, Henry J.............Montgomery
Davis, Sumner D. II..........Talladega
Sledge, James N. Jr..........Greensboro
Welden, Joseph E............Wetumpka

Arizona

Brooksby, Wilford A...........Fredonia
O'Brien, William T. Jr..........Phoenix
Siegel, Philip....................Tucson

Arkansas

Bennett, Byron A..........Little Rock
Bennett, William H..............Paris
Dickins, Robert D...........Monticello
Gates, Stanley M.............Monticello
Goss, Joseph J..........No. Little Rock
Gray, Henry T.............Forrest City
Hearin, James T............Arkadelphia
Holt, Horace H.................Nashville
Kelley, Kenneth M. Jr.......Texarkana
Kitchens, Howard H. Sr.....Little Rock
Nisbett, James M.............Little Rock
Richardson, Fount..........Fayetteville
Riley, William G.............Ft. Smith

California

Bridgman, Judd G............San Mateo
Brown, Charles H...... ...Los Angeles
Browning, Ellis V.............Arlington
Cole, Cecil C..............Long Beach
Crosby, Benjamin L. II........Burbank
Daniels, Arthur C.........Los Angeles
Davidson, Harold...........Los Angeles
Deakers, Roderick P........Los Angeles
Diamond, Abraham J.........Los Angeles
Goff, Henry C...............Los Angeles
Grant, Dudley-Francis P....Grass Valley
Harris, Joseph M...........Los Angeles
Hawley, Carl J..............Los Angeles
Helstrom, Gordon L.............Fontana
Henry, Amos R.............Project City
Hockenga, Mark T..............Alameda
Kerner, Jeremiah W.......Los Angeles
Kimmel, Charles B............Marysville
Krieger, Sherburne..........Los Angeles
Krutchkoff, Morris...............Eureka
Mapes, Cline N.............Los Angeles
Marasco, Fred B.........San Francisco
Moon, Henry D...........San Francisco
Powers-Heald, Frederick......El Centro
Richli, William C................Stockton
Rothe, Ronald E............Loma Linda
Rubaum, Ruben S.........Los Angeles
Shuman, John W.........Santa Monica
Wilber, William G.........San Francisco
Williamson, Robert G...........Ontario
Wilson, Clinton A.........Los Angeles

Colorado

McDonough, John A.............Denver
Terry, Robert T...................Denver

Connecticut

Bird, Frederick S...............Bristol
Brier, Hyman D.............Bridgeport
Conner, Edward D...........Stratford
Crane, James E..................Stamford
Fox, Sidney...............W. Hartford
Freedman, David A.........New Canaan
Gentile, Angelo L..........New Haven
Harvey, Harold I...........New Britain
Parrella, Gioacchino S.......New Haven
Solomkin, Mark............W. Hartford
Winfield, Raymond J............Hartford

Delaware

D'Alonzo, Constance A.......Wilmington
Lawrence, Jerome..........Wilmington
Murray, Roger................Wilmington
Parker, Albert F..............Wilmington

District of Columbia

Kelly, Thomas J..........Washington
Thomassy, George E.......Washington

Florida

London, Seymour B..........Dade City
Usdin, Daniel R..........St. Augustine

Georgia

Bray, Adolphus Jr...............Dalton
DiLorenzo, Gaspare.... ....Atlanta
Frischberg, Samuel B...........Atlanta
Gates, Phillip H.................Manson
Keller, Alexander P. Jr.........Atlanta
Milton, Paul H.................Decatur
Roberts, Burch J...............Cornelia
Shorter, Henry F. Jr............Atlanta

Idaho

Mangum, John R...............Nampa
Stone, Harold W....................Boise
Truxal, Albert C...............Rexburg

Illinois

Diamond, Sydney A...........Chicago
Fleischmann, Justin............Chicago
Fort, William B. ....Chicago
Goldberg, Milton L..............Chicago
Gorday, Abraham J..............Chicago
Gray, Peter T....................Sterling
Gregory, David..................Chicago
Hallenbeck, George G...........Chicago
Johnson, John H.................Chicago
Jones, John C............. .....Chicago
Kennedy, Francis A....... .....Decatur
Krasner, Leonard.......... .....Maywood
Long, Keith J............ ....Fairview
McGuire, James P..............Evanston
Musgrave, David E.........River Forest
Nigro, Dominic....................Chicago
Reid, Stephen E...................Chicago
Rosenblum, Abraham I..........Chicago
Sachnoff, Maurice D............Chicago
Scanlon, William..............La Salle
Schipper, Irving S...........Galesburg
Schlan, Louis.....................Chicago
Sinaiko, Russell P...............Chicago
Slotkowski, Eugene L...........Chicago
Sluzynski, Leonard S...........Chicago
Sternberg, Milton...............Chicago
Tavlin, Robert C.................Chicago
Taylor, Eugene E.........Bloomington
Weatherly, James A.........Murphysboro
White, Raymond B...............Chicago
Wyngarden, Clarence B.........Wheaton

Indiana

Bridwell, Edgar G.................Delphi
Butler, John O..............Indianapolis
Colip, William L............South Bend
Jenkins, Robert E............Noblesville
Wright, Robert W..........Indianapolis

Iowa

Bielinski, Stefan............Des Moines
Boe, Harry...................Sioux City
Conner, John D.... ....Nevada
Corbin, Ray L.............Des Moines
De Cicco, Ralph.............Des Moines
DeMeulenaere, John C.........Brooklyn
Dunn, Francis C...........Cedar Rapids
Edstrom, Henry....... ....Dubuque
Everist, Guy V......... ...Des Moines
Gerstman, Herbert..............Marion
Green, Joseph S..........Des Moines
Hicks, Wayland K............Sioux City
Marble, Willard P.........Marshalltown
Marquis, Fred M..............Waterloo
Samberg, Harry H........Des Moines
Schiff, Joseph......................Anita
Shrader, John C..........N. Ft. Dodge

Kansas

Norris, Robert P..................Wichita
Powell, Robert G..........Kansas City

Kentucky

Foshee, Clyde H...........Madisonville
Greene, James R...............Owenton
Kelsall, Harvey I................Jenkins
Mapother, Paul................Louisville
Rosenblatt, William H.........Louisville

Louisiana

Laurens, Henry Jr.........New Orleans
McKay, Joseph W. Jr.........Shreveport

Maine

Davis, Paul V..................Bridgeton
Thompson, Philip P. Jr.....So. Portland
Wein, Arthur B..............Waterville

Maryland

Coe, Frederick W.............Bethesda
Edwards, Monte..............Baltimore
Gordon, Wilbert Z..........Baltimore
Jones, Everett D...........Westminster
Kulesher, Henry T..........West Haven
Schultz, George N.........Silver Spring
Stein, Milton R................Baltimore
Zuravin, Meyer H.............Baltimore

Massachusetts

Carr, Francis J...............Somerville
Donoghue, William F. Jr.........Boston
Durgin, Lawrence N...........Amherst
Eigner, Sidney......................Lynn
Humphreys, Storer P...........Newbury
Mozes, Edward.................Malden
Newman, Melvin..............Brockton
Perrone, Samuel J.............Worcester
Provenzano, Rosario W.......Dorchester
Thomson, Robert S...............Milton
Tremblay, Roland G...........Brighton

Michigan

De Boer, Clarence J.......Grand Rapids
Douglas, Robert J.............Muskegon
Dukart, Ralph J.....................Detroit
Engelman, Raymond M...........Detroit
Meier, Walter A..............Monroe
Pendy, John M..................Detroit
Redding, Lowell G................Detroit
Suwinski, Raymond H.......Hamtramck
Wake, Douglas L...............Detroit

Minnesota

Boosalis, Nicholas G...........Faribault
Cooper, Charles C.............St. Paul
Egge, Sanford G................Cokato
Ide, Arthur W. Jr...............St. Paul
Kenefick, Emmett V............St. Paul
Kremen, Isadore C..........Minneapolis
Lemon, Robert G.............Swattanna
Minsky, Armen A.......So. Minneapolis
Simonson, Donald B.....N. Minneapolis
Straus, Maurice L.............St. Paul

Mississippi

Green, John W.................Gulfport

Missouri

Day, Romney M..............St. Joseph
Dwyer, Hugh L.............Kansas City
Miller, Clint L............Lee's Summit

Montana

Vadheim, Albert L. Jr.........Bozeman
Wagner, Paul A..............Miles City

Nebraska

Chism, Carl E...................Lincoln
Folsom, John D...................Lincoln
Niehus, William B..............Valentine
Rosenberg, David S.............Franklin
Simon, Werner.....................Omaha
Stickler, Harry E...............Beatrice

PHYSICIANS SEPARATED FROM SERVICE

New Hampshire

Gage, Earl J.	Laconia
Gill, MacLean J.	Concord

New Jersey

Miller, Eugene L.	Newark
Rosen, Charles E.	Union City
Terrell, Edward E.	Cranford
Tilley, John A.	Eatontown

New Mexico

Magill, Herbert K.	Raton
Maldonaldo, Jose	Santa Fe
Zausner, Joseph	Ft. Bayard

New York

Begenau, Vernon G.	New York
Bennett, William L.	New York
Bonica, John J.	Brooklyn
Briehl, Walter	New York
Brody, Nathan	Brooklyn
Cohen, Abraham	New York
Coler, Eugene S.	New York
Conole, Frank D.	Binghampton
Conrad, Clyde K.	Chappaqua
Dancik, Daniel	Long Island
D'Angelo, John V.	Bronx
Denton, Clarence	New York
Dribben, Irving S.	New York
Drysdale, Cyril E.	Northport
Elias, Frederick	Woodbourne
Fallis, Daniel	W. Hempstead
Feitell, Arthur	Brooklyn
Ferraro, Eugene M.	New York
Finklestein, Howard E.	Woodhaven
Frank, Richard L.	New York
Gaynin, Henry T.	Bronx
Geffen, Abraham	New York
Goodner, John T.	New York
Graff, Edward S.	Voorheesville
Hayman, Charles R.	Scarsdale
Herbert, Charles C.	New York
Hoch, Samuel	Lynbrook, L. I.
Horowitz, Arthur H.	New York
Hunter, Fred J. Jr.	New York
Jaffe, Gorman	Brooklyn
Johnson, Robert M.	Tarrytown
Kelsey, Robert D.	Franklinville
Kilroe, John C.	New York
Kolb, Edwin P.	Holtsville
Krasner, George D.	Brooklyn
Kutch, Joseph H.	Brooklyn
Labate, Philip A.	Brooklyn
Laus, Edward R.	New York
Leder, Frank E.	Brooklyn
Lewis, Murray D.	Rochester
Light, Jacob S.	Brooklyn
Mansueto, Biagio S.	Batavia
Maray, Hugh Z.	Jackson Heights
Marrin, Charles A.	New York
Marsh, Edward H.	White Plains
Martin, Thomas J.	Buffalo
Mayer, Hyman R.	Bronx
Monachino, Saint R.	Bronx
Nuzzolo, Charles A.	Long Island
Pierce, Harold F.	New York
Pierce, William W.	Gasport
Pisetsky, Joseph E.	New York
Pollack, Nathan	Brooklyn
Power, Thomas C.	New York
Richards, Marcus S.	Tully
Riforgiato, Frank T.	Buffalo
Rogliano, Albert G.	Tuckahoe
Ronson, Chris G.	Watertown
Rosen, Charles	Schoharie
Rosenbaum, David	Paterson
Rosenberg, Samuel N.	Brooklyn
Ross, Benjamin	Brooklyn
Sacco, Rosario	Bronx
Sanfilippo, Paul J.	Elmhurst
Scheer, Arthur A.	New York
Schneider, A. David	Scarsdale
Schneider, Louis	E. Rockaway
Schraft, William C. Jr.	Irvington

New York—Continued

Shaw, Maxwell B.	Brooklyn
Sherman, Samuel R.	Great Neck
Simon, Michael R.	Brooklyn
Singer, Louis	St. Albans
Solovay, Hyman U.	Brooklyn
Sommer, Robert I.	Pleasant Valley
Spielberger, Lawrence	New York
Theodore, Frederick H.	New York
Thomas, Stephen	Rochester
Walden, Richard H.	New York
Waltman, Richard	Brooklyn
Weintraub, Arthur	New York
Weltman, Joseph S.	Schenectady
White, William F.	Buffalo
Wise, Bernard O.	Montgomery

North Carolina

Quinn, David E. Jr.	Oteen
Shull, William H.	Charlotte
Waldrop, Grayson S.	New Bern

North Dakota

Boom, Gaylord W.	Ellendale
Smith, Don V.	Grand Forks
Stenerodden, Sidney C.	Grand Forks

Ohio

Canfield, Irving H.	Columbus
Dunham, Marshall B.	Dayton
Eastman, Robert L.	Mt. Vernon
Fertman, Manuel H.	E. Cleveland
Franklin, John	Cincinnati
Haire, William T.	Euclid
Harner, Ronald M.	Canton
Hayashi, Shigeki	Cleveland
Hickey, Daniel V.	Canton
Jurin, Benjamin M.	Cincinnati
Kravitz, Hilard L.	Dayton
Lehmann, William K.	Dennison
McNerney, Neville H.	Cuyahoga
Newell, Wilson G.	Lodi
Robinson, Harold A.	Elyria
Sells, Robert L.	Toledo
Taylor, Ross V. V.	Cleveland
Weinman, Edward B.	Steubenville

Oklahoma

Coyle, John J.	Chandler
Kinnan, Leon F.	Tulsa
Thompson, William B.	Oklahoma City

Oregon

Eisendorf, Lester H.	Portland
Findley, Dwight H.	Medford
Hubbard, Cleon K.	Portland
Munroe, Walter R.	Portland
Nohlgren, Joseph E.	Salem
Reed, Delbert	Portland
Searing, Donald H.	Monmouth
Sturdevant, Charles O.	Portland
Thompson, Arthur I.	Washington
Zener, Francis B.	Portland

Pennsylvania

Barrett, Robert C.	Carnegie
Conroy, Edward G.	Quakertown
Cook, John M.	Pittsburgh
Custer, Charles C.	Pittsburgh
Dale, Anthony D.	Philadelphia
Dickinson, William W.	W. Philadelphia
Hoffman, Frank D.	Greensburg
Horner, Merle M.	Petrolia
John, Winfield C.	Uniontown
Kring, Carroll S.	Birdsboro
Kroll, John G.	Mount Carmel
March, Linton E.	Birdsboro
Markley, George M.	Mechanicsburg
Miller, Carl S.	Philadelphia
Snyder, George A.	Altoona
Sobel, Irvin Q.	Pittsburgh
Refowich, Richard S.	Bethlehem
Terry, Willard B. G. Jr.	Philadelphia
Thompson, Frank V.	Nazareth

Pennsylvania—Continued

Thompson, Lloyd L.	Pittsburgh
Wainger, Charles K.	York
Wasnick, William	Wilkes-Barre

Rhode Island

Thomas, Alton P.	Woonsocket

South Carolina

Miller, Harold	Columbia
Valley, Thomas P.	Pickens

South Dakota

Behrens, Clayton L.	Hermosa
Hansen, Harold F.	Vermillion

Tennessee

Beets, Earl R.	Mascot
Brennan, Louis V.	Memphis
Harrison, Carrington	Nashville
Ogle, Ben C.	Knoxville

Texas

Brown, Charles H.	Dallas
Hoffmaster, Vance D. Jr.	San Antonio
Howard, John P.	Dallas
Kupper, Roland C.	San Antonio
Scott, Raymond E.	San Antonio
Williams, William E.	Austin

Utah

Gubler, Kelly H.	Salt Lake City

Vermont

Berry, Paul N.	Richmond

Virginia

Brimmer, Karl W.	Arlington
Culbertson, William R. Jr.	Coeburn
Moss, James M.	Arlington
Varano. Nicholas R.	Buckroe Beach

Washington

Baer, Adrian D.	Seattle
Brown, William C.	Seattle
Debit, Ralph M.	Kennewick
Ferse, Paul	Seattle
Jones, Charles H.	Centralia
Player, Glen S.	Seattle
Revelli, Robert J.	Spokane
Tryggvi, Carl	Seattle
Wolford, Louis E.	Clarkston
Woolery, James W.	Seattle

West Virginia

Davisson, Claude R.	Weston
Gilman, Joseph	Clarksburg
Holms, Edward B.	Parkersburg
Schmutz, Melvin A.	Alderson
Schoensee, B. E.	White Sulphur Springs
Shein, Melvin	Williamson
Siegel, William B.	Alum Creek
Steptoe, Philip P. Jr.	Shepherdstown
Updike, Raymond A.	Montgomery

Wisconsin

Miller, Edward A.	Watertown
Roncke, George J.	Waukesha
Schroeder, Irvin L.	Milwaukee
Smith, Miles B.	Beloit

Canal Zone

Bates, Lewis B.	Ancon
Fairchild, Laurence M.	Ancon
Kerlan, Martin	Ancon
Shrager, Joel	Balboa

Hawaii

Lowrey, John J.	Honolulu

Puerto Rico

Ferraiuoli, Eustaquio B.	Santurce

England

Burgess, David W.	London

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest: such as relate to society activities, new hospitals, education and public health.)

ALABAMA

State Meeting at Birmingham.—The annual session of the Medical Association of the State of Alabama will be held in Birmingham April 14-16 at the Thomas Jefferson Hotel under the presidency of Dr. Carl A. Grote, Huntsville. In addition to papers by members of the association the program will include those on Tuesday by Drs. Winfield K. Sharp Jr., U. S. Public Health Service, Washington, D. C., on "The Part Played by Alabama Physicians in the Development of Public Health"; C. Allen Good Jr., Mayo Clinic, Rochester, Minn., "Importance of Follow-Up Roentgenograms in Pulmonary Diseases"; Alvert Weinstein and Cobb Pilcher, Nashville, Tenn., "Management of Hypertension, with Particular Reference to the Surgical Treatment"; Reginald Fitz, Boston, the Jerome Cochran Lecture, and Oscar T. Clagett, Mayo Clinic, Rochester, "Surgical Management of Gastric and Duodenal Ulcers." The alumni banquet of the University of Alabama School of Medicine will be held Tuesday evening. Among the speakers will be Dr. Harrison H. Shoulders, Nashville, Tenn., President, American Medical Association. The session will close with a business meeting of the association sitting as the board of health of the state of Alabama.

CALIFORNIA

New Program for Treatment of Mental Diseases.—The state of California has embarked on a new program for the prevention and treatment of mental diseases. Preparations are already under way for construction of several mental institutions and the modernization of existing facilities. The department of mental hygiene has established clinics in Los Angeles and San Francisco, and Governor Earl Warren has advocated their expansion in San Diego, Fresno, Sacramento and other communities. Dr. Lawrence Kolb, Sacramento, former chief, mental hygiene division, U. S. Public Health Service, has been appointed deputy director, medical, to develop a program of raising treatment standards and to promote mental health in the community. A new position of director of clinical services has been established at each one of the state mental institutions. No administrative responsibilities are attached. At present positions are available in the department for physicians and surgeons, psychiatrists and clinical directors with salaries ranging from $345 to $715 a month. Veterans will receive special consideration. Out of state physicians may practice in California mental institutions for one year before receiving their California license. Address inquiries to F. E. Kline, State Personnel Board, 401 State Building, Los Angeles.

CONNECTICUT

Society News.—On Tuesday, April 8, Dr. Morris Fishbein, editor of The Journal, will address members of the Fairfield County Medical Association at their annual meeting, Hotel Stratford, Bridgeport. The following evening Dr. Fishbein will speak at the 100th anniversary meeting of the Central Medical Society, Middletown.

Personal.—Dr. R. Glen Urquhart, Norwich, has been appointed to the staff at St. Francis hospital, Hartford, as consultant in diseases of the chest. Dr. Urquhart has been in private practice since his retirement a year ago as chief surgeon to the five state sanatoriums.——Dr. C. Frederick Yeager, Bridgeport, is the physician for the Remington Arms Company, Inc., Bridgeport, rather than the Remington Rand Company, as stated in The Journal, March 8, page 706.

GEORGIA

Changes in Health Officers.—Dr. Clarendon B. Woods, Washington, D. C., has been appointed health officer for Hampton and Colleton counties with headquarters in Walterboro. Dr. John D. Stillwell, Waycross, has been transferred from the regional office to the state health department in Atlanta as assistant director of local health organizations, replacing Dr. Harald M. Graning, recently recalled from Georgia by the U. S. Public Health Service for assignment to cancer control activities. Dr. Stillwell, a graduate of Northwestern University Medical School, 1927, entered public health work in Georgia in 1938 as commissioner of health in the Telfair-Wheeler District Health Department, where he remained until beginning regional duties in 1940.

ILLINOIS

Increase in Diphtheria Deaths in 1946.—The Illinois Department of Public Health reports the doubling of deaths from diphtheria in 1946 over 1945. The disease caused 13 deaths in 1946 among children under 5, as opposed to 6 in 1945 in the same age group. The 9 deaths among children 5 to 14 were 3 more than for those ages during 1945. The department also reports an increase in diphtheria among adults, with 9 deaths in persons 15 years and over as opposed to 3 in 1945.

Two More New Sewerage Systems.—Dr. Roland R. Cross, director, Illinois Department of Public Health, Springfield, and chairman of the sanitary water board, has issued a permit to the city of Louisville for construction of a new sewer system and sewage treatment works, with an outlet into Little Wabash River. A permit was issued also to Washington, Tazewell County, for the construction of a new sewer system, including a modern sewage treatment plant. These make twelve permits issued to date this year by the state sanitary water board for the construction of sewage disposal facilities by municipalities.

Chicago

Bequest to St. Luke's.—Under the will of Mrs. Emily Lyon Gary, formerly of Glencoe, widow of the late John W. Gary, investment banker, St. Luke's Hospital will receive $225,000 in direct bequests and other bequests which will total $275,000. Mrs. Gary died February 18.

Special Society Elections.—At its annual meeting, February 17, the board of trustees of the Hektoen Institute for Medical Research of the Cook County Hospital elected as directors Britton I. Budd, Chester Davis, William N. Erickson, Donald M. Nelson, Guy E. Reed and Daniel Ryan.

Annual Lecture on Medical History.—The fourth annual D. J. Davis Lecture on Medical History will be delivered by William S. Middleton, dean, University of Wisconsin Medical School, Madison, April 9, in room 221 of the University of Illinois College of Medicine. The subject will be "Wisconsin Men in Chicago Medicine."

Meeting on Isotopes and Radioactive Iodine.—At a meeting of the Chicago Medical Society Wednesday, April 26, in the John B. Murphy Memorial Auditorium, 8 p. m., Dr. John H. Lawrence, head of the division of medical physics, University of California Medical School, Berkeley-San Francisco, will speak on "The Use of Isotopes in Medical Investigation." Dr. Mayo H. Soley, assistant dean, University of California Medical School, will speak on "Radioactive Iodine in the Treatment of Toxic Goiter." The meeting will be preceded by a dinner in honor of the guest speakers at the Drake Hotel, 5:30 p. m.

IOWA

Fly Control Conference.—At a recent meeting of the State Fly Control Conference, preparations were made for an extensive campaign in 1947. Active community groups and local farm organizations are included in promotion of the campaign. Last year's campaign, carried out in Ames, Manchester, Maquoketa, Traer, Dysart and Winthrop, proved highly successful.

Committee for Study of Venereal Diseases.—At the first meeting of the Iowa Committee for the Study of Venereal Diseases, appointed jointly late in 1946 by the state medical society and the state department of health, it was recommended that the Iowa State Department of Health institute uniform procedures so that proper evaluation of the effectiveness of treatment schedules for the rapid treatment of syphilis might be made. The committee was formed to act as a clearing house for information on all phases of venereal disease diagnosis, treatment and control. The problem will be studied with a view toward making suggestions and recommendations to foster complete cooperation between the physicians of Iowa, the state department of health, the State University of Iowa College of Medicine, Iowa City, and other interested groups or agencies in order to obtain the ultimate in scientific diagnosis, treatment and control.

KENTUCKY

Eastern Medical Association.—At a meeting of the Eastern Kentucky Medical Association in Paintsville February 27 nine counties were represented in the attendance. Officers elected for the coming year were Drs. Clyde C. Sparks, Ashland, president; James C. Preston, Pikeville, vice president, and John G. Archer, Prestonburg, secretary. Among the speakers were Drs. John W. Moore, dean, University of Louisville School of Medicine; John A. Caldwell, clinical professor of surgery, University of Cincinnati; R. Arnold Griswold, professor and head of the department of surgery, University of Louisville; Walter C. Swann, Huntington, W. Va.; Howard E. Dorton, Lexington, and Philip E. Blackerby, commissioner of health, Louisville.

LOUISIANA

Annual Lecture.—Dr. William Dock, professor of medicine, Long Island College of Medicine, Brooklyn, delivered the annual lecture of the honorary medical society of the Louisiana State University School of Medicine, New Orleans, February 25, at Charity Hospital, on proteinuria and edema.

MARYLAND

Cancer Control Program.—The Maryland division of the American Cancer Society, in coöperation with the state health department and various county medical societies, announces that cancer detection centers have been opened at the University of Maryland Hospital and at the Johns Hopkins Hospital. Within the next year several additional centers will be opened in hospitals in Baltimore City and in the counties of the state. Tumor conferences are being conducted at various locations. Two pathologic laboratories have been established and containers for specimens have been distributed throughout the state. The pathologic report is sent to the physician by mail or telephone. The American Cancer Society will assist the medically indigent with complete coverage.

MASSACHUSETTS

University News.—Harvard Medical School announces the appointment of nineteen new members to the teaching staff, including assistants in various departments, fellows and research fellows. Among those appointed are Alexander Terzin, Belgrade, Yugoslavia, research fellow in bacteriology and immunology; Suzanne T. van Anerongen, Amsterdam, the Netherlands, assistant in psychiatry; Pen-Chung Yu, Kweiyang, Kweichow, China, research fellow in bacteriology and immunology, and Dora G. Mittelman, Buenos Aires, Argentina, research fellow in physical chemistry.

NEW YORK

Chairman of Public Health Council.—Dr. L. Whittington Gorham, Albany, has been named chairman of the state Public Health Council. Dr. Gorham, a graduate of Johns Hopkins University School of Medicine, Baltimore, has for ten years been director, department of medicine, Albany Medical College and physician in chief on the staff of the Albany Hospital.

Appoint Tuberculosis Field Assistant.—Mr. Earl J. Winters, formerly chief technician of the x-ray service of the Cuyahoga County Tuberculosis Clinic, Cleveland, has been appointed field assistant of the New York Tuberculosis and Health Association's chest x-ray service. Mr. Winters will schedule the association's mass x-ray projects and will emphasize extension of this work among business and industrial concerns in Manhattan. During 1946 more than 24,000 individuals were x-rayed in Manhattan, the Bronx and Richmond under the association's x-ray program conducted in cooperation with the department of health.

Facilities for Care of Advanced Cancer Patients.—Establishment of facilities for the care of cancer patients in advanced stages of the disease was announced in January by Julius J. Perlmutter, president of the National Cancer Foundation. The facilities consist of a unit of 125 beds at Manhattan General Hospital maintained by the foundation and supervised by physicians of the National Medical and Scientific Council of the foundation. The foundation plans to establish special hospitals, to be known as Hope Institutes, in other communities. Beds in the cancer unit will be available to cancer patients regardless of economic status, Mr. Perlmutter said. Application can be made through the patient's physician, through accredited social service agencies or by direct application to the medical Social Service Division of the National Cancer Foundation, 85 Franklin Street.

New York City

Site for New Metropolitan Hospital.—An entire block on the East Side was acquired in February as a site for the new Metropolitan Hospital, the New York *Times* reports. It extends from First to Second Avenue from Ninety-Eighth to Ninety-Ninth Street. Negotiations are under way for further property to complete the site. The new hospital, which will replace the present Metropolitan Hospital on Welfare Island, will have a capacity of 750 beds, with the upper floors devoted to a self-contained unit of 250 beds for tuberculous patients.

Rosenstock Memorial Awards.—The Rosenstock Memorial Foundation, Inc., offers fellowships of $2,000 a year for medical research in hospitals with medical school affiliations in the city. Fellowships are limited to those who apply within three years of completion of internship or residency. Recipients recently announced are Drs. Doris J. W. Escher for research in edema at Montefiore Hospital for Chronic Diseases, Raymond S. Megibow for research in hypertension at Mount Sinai Hospital and Alan Erslev for research in leukemia at Memorial Hospital.

Alfred E. Smith Memorial Wing.—The Civilian Production Administration has announced approval of the construction of a $1,569,900 Alfred E. Smith Memorial Wing of St. Vincent's Hospital. The addition, to be finished in about a year and a half will accommodate more than 118 beds, according to the New York *Sun*. A campaign to construct a hospital, "a living memorial perpetuating Alfred E. Smith's services to his fellow man," was launched in October 1945 on the first anniversary of former Governor Smith's death (The Journal, Oct. 20, 1945, p. 563).

Dedicate Memorial Plaque.—At a ceremony March 5 the employees of Kings County Hospital, Brooklyn, dedicated a memorial plaque to 816 employees who served during World War II, 9 of whom died in service. Among the speakers at the program were Dr. Joseph Tenopyr, president of the hospital's medical board; Col. George G. Dixon, M. C., Brooklyn, former chief of surgery; Col. Arthur Fankhauser, M. C., Brooklyn, former chief of medicine, 37th General Hospital, U. S. Army, and Dr. Edward M. Bernecker, commissioner, department of hospitals, City of New York.

New Blood Donor Service.—The American Red Cross, in cooperation with the Coordinating Council of the Five County Medical Societies of Greater New York, will establish a civilian blood donor service within the next month. Donor stations will be established at 401 Fifth Avenue and 57 Willoughby Street, Brooklyn, wartime blood donor service points. The project will make available whole blood for transfusions and research and also blood derivatives for various uses. The existing blood and plasma exchange, a nonprofit agency serving metropolitan hospitals, will be supplemented, not replaced. Patients in five municipal hospitals, Bellevue, Kings County, Morrisiania, Queens General and Sea View, will be the first to benefit by the new program. Expansion of the coverage is expected to include additional city hospitals and voluntary institutions. The blood and blood derivatives made available will be free, but if the program is extended to voluntary hospitals a laboratory service charge will be made, although the blood itself will be free.

NORTH CAROLINA

Personal.—Frank G. Hall, Ph.D., Duke University School of Medicine, Durham, has returned from Germany, where he spent two and one-half months at the request of the Army Air Forces investigating German scientists and their wartime research in the field of aviation medicine.

Director of State Tuberculosis Sanatoriums.—The board of directors of the North Carolina tuberculosis sanatoriums has selected Dr. Henry S. K. Willis, superintendent at the William H. Maybury Sanatorium, Northville, Mich., as superintendent of the three state institutions, succeeding the late Dr. Paul P. McCain. Dr. Willis is a graduate of the University of North Carolina and also of Johns Hopkins University School of Medicine, Baltimore.

OREGON

University News.—Dr. Numan W. Karr has been appointed assistant professor in the department of pharmacology, University of Oregon Medical School, Portland. Dr. Karr received his Ph.D. at the University of California and his M.D. from the University of California School of Medicine, Berkeley-San Francisco. For the past two years he has been on active duty with the navy.

Memorial Lectures.—The Ernest A. Sommer Memorial Lectures will be given at the University of Oregon Medical School, Portland, April 2-4 in conjunction with the Alumni meeting of the University of Oregon Medical School. Guest lecturers will be Drs. Karl F. Meyer, director of the George Williams Hooper Foundation, the Medical Center, University of California, Berkeley-San Francisco; Philip S. Hench of the arthritis section, Mayo Clinic, Rochester, Minn., and Frederick H. Falls, professor and head of the department of obstetrics and gynecology, University of Illinois College of Medicine, Chicago.

PENNSYLVANIA

Industrial Health Conference at Williamsport. — The Central Pennsylvania Industrial Health Conference will be held in Williamsport April 23. Among subjects to be discussed are mass x-ray in industry, health education in industry, how a plant medical service can help industry and how to secure a plant medical program. At a round table discussion on the benefits of an industrial health program representatives of the employee, the employer, the industrial physician, the industrial hygienist, the insurance carrier and the nurse will participate. In addition, the state industrial health bureau will have an exhibit.

Tuberculosis Case Register. — The Tuberculosis and Health Society of Dauphin and Perry Counties has organized a central tuberculosis case register, a result of a meeting Jan. 14, 1945 of representatives of various health groups and private physicians. The register has received the approval of governors of Dauphin County Medical Society and of the Pennsylvania Department of Health. The register contains information regarding all known cases of tuberculosis, including names and locations of patients, diagnosis, medical supervision and household contacts from the beginning to the end of observation. This information was assembled with the assistance of the Pennsylvania Tuberculosis Society and the advice of the case register consultant of the National Tuberculosis Association.

Meeting of Tumor Clinic Association.—Dr. Stanley P. Reimann, Philadelphia, chairman, Cancer Commission, Medical Society of the State of Pennsylvania, and Dr. Danib Pfeiffer, chief surgeon at Abington Memorial Hospital, Abington, will speak on the causes, early diagnosis and modern treatment of cancer at a meeting of the Wainwright Tumor Clinic Association in the Women's Club Auditorium, Allentown, April 8 to which the public is invited. A discussion period open to questions from the public will follow. The association, named in honor of the late Dr. Jonathan Wainwright, Scranton, will hold two scientific sessions during the day, a morning session at the Allentown Hospital and one in the afternoon at Sacred Heart Hospital. At the morning session Dr. George R. Moffitt, Harrisburg, will speak together with Drs. William C. Troxell, Willard C. Masonheimer, C. Merrill Leister and Martin S. Kleckner, all of Allentown. Dr. J. Rudolph Jaeger, neurosurgeon at Jefferson Medical College of Philadelphia, will be guest speaker at the afternoon meeting along with Drs. Donald Stader, Latrobe, Leo T. Chylack, Charles L. Mengel and J. Frederic Dreyer, Allentown. The Lehigh County Medical Society is sponsoring the evening meeting.

TEXAS

University News.—Dr. Frederick E. Mohs, University of Wisconsin Medical School, Madison, gave a demonstration on the chemosurgery of cancer at the University of Texas Medical Branch, Galveston, March 8. Dr. Lester R. Dragstedt, professor of Surgery, University of Chicago School of Medicine, gave a special lecture at the university March 13 under the auspices of the Phi Chi Medical fraternity.

Memorial Lectureship.—A memorial lectureship in honor of Arnold C. Surman, senior medical student killed at Post, Texas, in an airplane crash in the summer of 1946, has been established by the Alpha Kappa chapter of the Phi Beta Pi medical fraternity at the University of Texas Medical Branch, Galveston. The first lecture was given by Dr. George E. Burch, associate professor of medicine, Tulane University of Louisiana School of Medicine, New Orleans, March 4 on "Salt and Water Balance in Cardiac Conditions."

WISCONSIN

State Society Publishes Blue Book. — The 1947 Blue Book issue of the *Wisconsin Medical Journal* is off the press. Special feature of the book is the outline of the activities of the Wisconsin Veterans Medical Service Agency of the State Medical Society. Topics include procedures for service under the agency and its relation to the Veterans Administration and to the Wisconsin Department of Veteran Affairs. In addition, the laws of Wisconsin pertaining to the medical profession have been reviewed. Complimentary issues have been sent to all junior and senior medical students of both medical schools in Wisconsin.

Cancer Symposium.—The Medical Society of Milwaukee County will hold a cancer symposium April 10-11 at Marquette University School of Medicine auditorium beginning Monday at 8 p. m. Among the speakers will be Drs. Charles B. Huggins, professor of surgery (urology), University of Chicago Medical School, "Diagnosis and Treatment of Cancer of the Prostate"; Ursus V. Portmann, radiologist, Cleveland Clinic, Cleveland, "X-Rays and Cancer of the Breast"; Michael E. DeBakey, assistant professor of surgery, Tulane University of Louisiana School of Medicine, New Orleans, "Carcinoma of the Lung"; Stanley P. Reimann, professor of oncology, Hahnemann Medical College and Hospital of Philadelphia, "Philosophy of Cancer Research"; Grantley W. Taylor, instructor in surgery, Harvard Medical School, Boston, "Lymphatic Metastases of Cancer," and Owen H. Wangensteen, professor of general surgery, University of Minnesota Graduate School, Minneapolis-Rochester, "Carcinoma of the Stomach."

GENERAL

Pediatric Professors.—Dr. Franklin P. Gengenbach, Denver, has been made emeritus professor of pediatrics in the University of Colorado School of Medicine. He is succeeded by Dr. Harry H. Gordon, New York City. Dr. Edwards A. Park, Baltimore, has been made emeritus professor of pediatrics at Johns Hopkins University School of Medicine, Baltimore, and is succeeded by Dr. Francis F. Schwentker, formerly of Larchmont, N. Y.

Dr. Whitfield Heads Federation of State Boards.—At the recent conference of the Federation of State Medical Boards of the United States, held in Chicago, Dr. Richard N. Whitfield, Jackson, Miss., for twenty-three years director of vital statistics and assistant secretary, Mississippi State Board of Health, was elected president. Dr. Whitfield is a graduate of the University of Nashville, 1905, and has served more than thirty years in public health work in Mississippi.

Endocrinology Awards.—"The Clinical Use of Androgens in the Female" is the subject for the 1947 Schering Award competition among medical students in the United States and Canada. As in previous years, cash prizes of $50, $300 and $500 will be given for the best manuscripts received on this subject. Three judges prominent in endocrinology will select the winners. Dr. Norman L. Heminway, Somerville, N. J., head of the Schering medical service department, is chairman of the Schering Award Committee and in charge of the competition. This year's contest closes July 31.

American Board of Obstetrics and Gynecology.—The next oral examination and annual meeting of the American Board of Obstetrics and Gynecology will be held at the Hotel William Penn, Pittsburgh, June 1-7. The following examiners have been appointed to assist the directors of the board: Drs. William C. Danforth, Evanston, Ill.; John L. Parks, Washington, D. C.; Robert L. Faulkner, Cleveland; Samuel A. Cosgrove, Jersey City, N. J.; Lawrence M. Randall, Rochester, Minn.; Nicholson J. Eastman, Baltimore; Conrad G. Collins, New Orleans; William J. Dieckmann, Chicago; Clifford B. Lull, Philadelphia; Josiah R. Eisaman, Pittsburgh, and Herbert E. Schmitz, Chicago.

Physician and Dentist Legislators.—In the present 80th Congress there are eight physicians and two dentists, one more physician and one less dentist than in the 79th Congress. As a result of an inquiry it was learned that in thirty state legislatures there are fifty-three physicians and sixteen dentists, while eighteen states report no physicians or dentists in their legislatures. Eighteen states have but one physician, while nine have two physicians serving this year, and three have four, five and six respectively. The governor of Idaho, Dr. C. A. Robbins, Boise, is a physician, and the governor of Wyoming is a dentist, Dr. Lester C. Hunt. Twelve states have one or two dentist legislators. One legislator holds a degree of D.D.S. as well as that of M.D.

Interim Commission of World Health Organization Meets March 31.—World problems in public health will be reviewed and major technical advances studied when more than a hundred international leaders in medicine and public health meet in Geneva, Switzerland, March 31 for the third session of the World Health Organization Interim Commission. The Food and Agriculture Organization, the Social Affairs Department of the United Nations and the United Nations Educational, Scientific and Cultural Organization will send observers. Other agencies invited include the International Refugee Organization, the Provisional International Civil Aviation Organization, the International Children's Emergency Fund, the International Labor Organization and the United Nations Relief and Rehabilitation Administration. The Interim Commission is composed of eighteen member states: Australia, Brazil, Canada, China, Egypt, France, India, Liberia, Mexico, the Netherlands, Norway, Peru, the Ukrainian Soviet Socialist Republic, the Union of Soviet Socialist Republics, the United Kingdom, the United States of America, Venezuela and Yugoslavia. The $1,500,000 field service function transferred from the United Nations Relief and Rehabilitation Administration will be given final allocation by the Interim Commission. This program includes fellowships and lectureships and field missions in eleven countries which formerly received UNRRA health assistance. The program for the expert technical committees will be outlined and membership announced for committees on malaria, quarantine, biologic standardization, narcotics, pilgrimage clauses and yellow fever. Dr. H. van Zile Hyde, U. S. Public Health Service, and Howard Calderwood, U. S. State Department, will attend from the United States government. Dr. F. A. Calderone, director, Interim Commission headquarters office, will head a small group of specialists from the Interim Commission Secretariat who will attend the conference. United Nations observers will include Dr. Gustavo de Sa Lessa, chief of the Health Section of the Social Affairs Department, and Dr. J. M. Latsky of the Nutrition Section of the Food and Agriculture Organization.

Awards by Insurance Medical Research Fund.—The Life Insurance Medical Research Fund of New York has announced the award of more than $500,000 for research in the field of cardiovascular disease. The fund made forty-eight grants in aid of medical research, thirteen postgraduate research fellowships and one student research fellowship. Grants of more than $15,000 each were as follows:

Massachusetts General Hospital, Boston, for research by Drs. James C. White, Paul D. White and Fiorindo A. Simeone on hypertensive and peripheral vascular disease with special reference to the role of the autonomic system, including laboratory and clinical studies, $31,500.

Johns Hopkins University, Baltimore, for research by Dr. Francis F. Swentker on the pathogenesis and prevention of rheumatic fever, $23,625.

Harvard Medical School, Boston, for research by Dr. Lewis Dexter on the dynamics of the pulmonary circulation in disease and under conditions of rest and stress, $21,000.

Jefferson Medical College of Philadelphia for research by Dr. John H. Gibbon Jr. on the temporary artificial maintenance of the circulation, $21,000.

The Children's Hospital, Philadelphia, for research by Dr. T. F. McNair Scott on the role of hemolytic streptococci in the etiology of rheumatic fever (renewal), $19,950.

New York University for research by Dr. David P. Earle Jr. on the relationship between renal function and the volume and composition of body fluids, $18,900.

University of Minnesota Medical School, Minneapolis, for research by Dr. Maurice B. Visscher on induced hypertension (renewal), $18,900.

Emory University School of Medicine, Atlanta, for research by Drs. Daniel C. Elkin and James V. Warren on the nervous and vascular factors in myocardial ischemia and infarction, $16,800.

New York University for research by Dr. Colin M. MacLeod on the purification, properties and mode of action of streptolysin O and S and fibrinolysin and their relation to rheumatic fever (renewal), $16,065.

University of California Medical School, Berkeley-San Francisco, for research by Drs. Israel L. Chaikoff and William J. Kerr on some fundamental factors in the aging process, $15,750.

University of California for research by David M. Greenberg, Ph.D., on metabolic changes in the kidneys and arteries associated with the development of hypertension and arteriosclerosis, $15,750.

Annual Meeting of American College of Physicians.—The twenty-eighth annual meeting of the American College of Physicians will be held in Chicago April 28-May 2 under the presidency of Dr. David P. Barr, professor of medicine, Cornell University Medical College, New York. General headquarters will be at the Palmer House; other official hotels include the Bismarck, Congress; Chicagoan, Morrison, Sherman and the Stevens. The general sessions will be addressed by numerous speakers on a variety of subjects, of which only a few can be mentioned here on account of lack of space. The following physicians will speak by invitation:

Walsh McDermott, New York, Streptomycin in the Treatment of Tuberculosis.
Harry Eagle, Baltimore, Pharmacologic Properties of Penicillin and Their Bearing on Therapeutic Activity.
Frank L. Horsfall Jr., Seattle, Primary Atypical Pneumonia.
Fuller Albright, Boston, Adrenal Cortical Syndromes and Their Diagnoses.
Abner McGehee Harvey, Baltimore, Use of Drugs in the Treatment of Diseases of the Muscles.
Donald D. Van Slyke, New York, Effect of Shock on the Function of the Kidneys.
Ephraim Shorr, New York, Humoral Factors of Hepatorenal Origin in Shock.
Arthur C. Corcoran, Cleveland, Functional Pathology of Renal Disease.
J. Erik Jorpes, Stockholm, Sweden, Origin and Physiology of Heparin.
J. Garrett Allen, Chicago, A New Concept and Treatment of Purpura Hemorrhagica.
Isadore Snapper, New York, Chemotherapy of Multiple Myeloma.
Frederic A. Gibbs, Chicago, Management of Grand Mal and Petit Mal.
James L. Holland, Washington, D. C., Human Factors in High Performance Aircraft.

Clinics will be held at various local hospitals. The series of panel discussions on topics of practical value will be under the chairmanship of distinguished authorities. A program of entertainment for the ladies has been arranged. The headquarters of the technical exhibitors will be at the Congress Hotel. Those desiring to make hotel reservations should address the Housing Committee, American College of Physicians, % Chicago Convention Bureau, 33 North La Salle Street, Chicago 2. The complete program appears in the February *Annals of Internal Medicine.*

LATIN AMERICA

Sylvatic Plague Found in Peru.—Dr. Atilio Macchiavello of the Pan American Sanitary Bureau in Lima, Peru, reports that sylvatic plague has been found in highly concentrated form in the small animal population of a mountainous region on the frontier between Peru and Bolivia. Domestic rat species are completely absent from the area, but intense infection has been discovered in several species of ground squirrels. Nineteen human cases have been reported.

Special Society Elections.—New officers of the Sociedad Nacional de Cirugia of Cuba for the years 1947-1948 are Dr. Vicente Banet y Pina, Havana, president; Dr. José Lastra Campo, Havana, vice president; Dr. René Smith Leal, Havana, secretary; Dr. Luis Rodriguez Baz Alfonso, Havana, vice secretary; Dr. Antonio Rodriguez Diaz, treasurer, and Dr. Tomás R. Armstrong, Havana, vice treasurer.——New officers of the Sociedad Argentina de Pediatria for 1947 are Drs. Jose Maria Macera, president; Pascual R. Cervini, vice president, and Samuel Gonzalez Aguirre, general secretary. Other officers include Drs. Alfonso A. Bonduel, Alfredo Segers, Juan P. Garrahan, Carlos Ruiz, Alfredo Casaubon, Fernando Schweizer and Raul Cibils Aguirre.

CORRECTIONS

Harry Hoxsey.—In the editorial entitled "Hoxsey—Cancer Charlatan" (THE JOURNAL, March 15, p. 774) the statement was made that Norman Baker had died. It appears now that he is still alive and that he recently attempted, with a brother and a Davenport, Iowa, attorney, to establish a research organization (one of its purposes being the collection of money) to study a new method of food preservation. The secretary of state in Iowa refused the petition.

Book Review: Horney's "Are You Considering Psychoanalysis?"—The review of this book, published in THE JOURNAL, March 8, page 732, fails to include the Philadelphia Psychoanalytic Institute in the list of training institutions affiliated with the American Psychoanalytic Association. The Philadelphia Psychoanalytic Institute, we are informed by Dr. Robert S. Bookhammer, was organized in 1940 and is a recognized and approved institute for training in psychoanalysis.

Marriages

WILLIAM THEODORE VAN HUYSEN, Weston, Mass., to Miss Yvette Wheeler Harrington of New Haven, Conn., Dec. 6, 1946.

FRANKLIN J. MASCIA, Newark, N. J., to Miss Genevieve Helen Savarese of Jamaica Estates, N. Y., Dec. 21, 1946.

JEROME OTIS WILLIAMS, Nashville, Tenn., to Dr. Marguerite Elizabeth Lazenby of Statesville, N. C., Dec. 18, 1946.

JAMES WHITE MERRITT JR., Gainesville, Ga., to Miss Jeanne Barry MacConnell of Punta Gorda, Fla., Dec. 8, 1946.

MARY ELIZABETH MORRIS to Mr. John T. Nansen, both of St. Louis, at Fort Leavenworth, Kan., May 21, 1946.

FRANZ STEFAN STEINITZ to Miss Jeanne Ann Sonnenschein, both of Chicago, in Glencoe, Ill., Dec. 15, 1946.

FLOYD STERLING ROGERS JR., Washington, D. C., to Mrs. Ann Meem McLean in Baltimore January 18.

CHARLOTTE LOUISE MELLER, Minneapolis, to Mr. Charles E. Biddle of Honolulu, T. H., Nov. 30, 1946.

HARRY MICHAEL SIEGEL, Chicago, to Miss Nita Alice Eisenberg of Winnetka, Ill., Dec. 22, 1946.

SHIRAS M. JARVIS, Eureka, Calif., to Miss Christiane Lamoreau of San Francisco, Dec. 21, 1946.

JAMES ALECK KELLEY to Miss Mary Kent Seignious, both of Kingstree, S. C., in December 1946.

MONROE A. ROSENBLOOM to Mrs. Arlene Weisberg Franklin, both of Syracuse, N. Y., Nov. 22, 1946.

ARTHUR WEINBERG, Far Rockaway, N. Y., to Miss Gloria Balmuth of Belle Harbor Oct. 6, 1946.

JAMES W. RIGGS to Miss Mary Elizabeth Adams, both of LaFollette, Tenn., January 8.

GLEN COILE SHULTS to Miss Love Gray, both of Newport, Tenn., Dec. 20, 1946.

IRVING A. KATZ to Miss Helen Louise Klein, both of Chicago, January 26.

Deaths

Khleber Heberden Beall ⊕ Fort Worth, Texas; Fort Worth School of Medicine, Medical Department of Fort Worth University, 1901; Johns Hopkins University School of Medicine, Baltimore, 1905; past president of the Tarrant County Medical Society; since 1923 treasurer and formerly vice president of the State Medical Association of Texas; past president of the Texas State Heart Association; served during World War I; during World War II was a member of the district appeal board for Selective Service; chief of staff of the W. I. Cook Memorial Hospital; first medical director of the Fort Worth Children's Hospital; vice president and member of the board and medical director of the State Reserve Life Insurance Company, director of the Fort Worth National Bank and member of the city school board; died Nov. 21, 1946, aged 68, of myocardial infarction.

John Bell Shoun ⊕ Elizabethton, Tenn.; Medical Department of Grant University, Chattanooga, Tenn., 1908; state representative from Johnson and Carter counties; for many years chairman of the Carter County Congressional Committee and member of the First District Judicial Committee; chairman of the Carter County Health Department and the Infantile Paralysis Committee; member of the Veterans of Foreign Wars, Southern Medical Association, Southern Railway Surgeons and the Tri-County Medical Society; served in France during World War I and later with the Army of Occupation in Germany; at one time sheriff of Johnson County; for many years owner of the Shoun Hospital and chief medical adviser of the North American Rayon Corporation; died January 14, aged 72, of coronary thrombosis.

John William Preston ⊕ Roanoke, Va.; born in Glade Hill, Va., Dec. 13, 1867; College of Physicians and Surgeons, Baltimore 1893; secretary of the Virginia State Board of Medical Examiners; fellow of the American College of Physicians; specialist certified by the American Board of Internal Medicine; member of the House of Delegates of the American Medical Association in 1927, 1928, 1929, 1930 and 1931; past president of the Medical Society of Virginia; member of the board of directors and formerly member and chief of staff, Roanoke Hospital; served on the staff of the Jefferson Hospital; chairman of medical advisory board number 31 and a member of the induction board in World wars I and II; died January 1, aged 79, of cerebral hemorrhage.

George Henry Stone, Norwalk, Conn.; Medical School of Maine, Portland, 1908; member of the American Medical Association, American Hospital Association and the Massachusetts Medical Society; past president of the New England Hospital Association and formerly director of the Bangor (Maine) Anti-Tuberculosis Association; served during World War I; at one time superintendent of the Eastern Maine General Hospital in Bangor and the Memorial Hospital in Worcester, Mass.; formerly assistant superintendent of the Peter Bent Brigham Hospital in Boston, where he had been executive assistant at the Boston City Hospital; died in New Orleans January 4, aged 64, of fracture of the skull.

James Orville MacDonald ⊕ New York; M.B., Queen's University Faculty of Medicine, Kingston, Ont., 1916 and M.D. in 1917; specialist certified by the American Board of Otolaryngology; associate clinical professor of otolaryngology at the New York Post-Graduate Medical School and Hospital, Columbia University, serving as attending otolaryngologist to hospital and dispensary; member of the American Academy of Ophthalmology and Otolaryngology; fellow of the American College of Surgeons; a lieutenant commander in the medical corps of the U. S. Naval Reserve during World War II; died in Savannah, Ga., January 13, aged 54, of cerebral hemorrhage.

Albert Ernest Rector ⊕ Appleton, Wis.; Rush Medical College, Chicago, 1897; specialist certified by the American Board of Otolaryngology; member of the American Academy of Ophthalmology and Otolaryngology; fellow of the American College of Surgeons; past president of the State Medical Society of Wisconsin and the Outagamie County Medical Society; member of the state board of health; affiliated with St. Elizabeth Hospital, where he was a member of the executive staff since 1942; died January 13, aged 73, of coronary thrombosis.

James W. Craig, Circle Mont.; Western University Faculty of Medicine, London, Ont., Canada, 1901; member of the American Medical Association and the Southeastern Montana Medical Association; past president of the Montana Public Health Association; at one time health officer of Kearney County in Nebraska; county health officer of McCone County; formerly state senator; at one time associated with the Indian Service; medical director of the McCone County Hospital; died in the Northern Pacific Hospital, Glendive, Dec. 28, 1946, aged 69.

John Steel Anderson ⊕ Greensburg, Pa.; University of Pittsburgh School of Medicine, 1913; past president of the Westmoreland County Medical Society; member of the Pittsburgh Obstetrical and Gynecological Society; served during World War I; on the staff of the Westmoreland Hospital; died Dec. 22, 1946, aged 60, of coronary occlusion.

William John Berger, De Soto, Kan.; University of Minnesota Medical School, Minneapolis, 1943; interned at the City of Detroit Receiving Hospital in Detroit; served during World War II; died in the Kansas City (Mo.) General Hospital Dec. 27, 1946, aged 30, of coronary thrombosis.

Tony Christensen Brown, Kansas City, Mo.; Chicago College of Medicine and Surgery, 1907; died in the Trinity Lutheran Hospital Dec. 27, 1946, aged 73, of cerebral sclerosis.

Charles Wesley Burgwin, Guys Mills, Pa.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1902; died in the Spencer Hospital, Meadville, Dec. 25, 1946, aged 73, of carcinoma.

Bruce Clark, Hiwassee, Va.; College of Physicians and Surgeons, Baltimore, 1891; died Dec. 19, 1946, aged 80, of tuberculosis.

Clyde C. Collom, Mart, Texas; Vanderbilt University School of Medicine, Nashville, Tenn., 1901; member of the American Medical Association; past president of the McLennan County Medical Society; affiliated with the Provident and Hillcrest hospitals in Waco; died in Santa Monica (Calif.) Hospital recently, aged 68, of hypertension and cerebral hemorrhage.

Louis Merriew Diemer, Philadelphia; Hahnemann Medical College and Hospital of Philadelphia, 1895; died Dec. 20, 1946, aged 72, of chronic glomerulonephritis.

Milton Goldberg ⊕ Los Angeles; University of Minnesota Medical School, Minneapolis, 1936; member of the American Psychiatric Association; interned at the Minneapolis General Hospital in Minneapolis and served a residency at the Boston Psychopathic Hospital; formerly a fellow in psychiatry at the Institute for Juvenile Research in Chicago and senior physician at the Manteno (Ill.) State Hospital; died Dec. 10, 1946, aged 35, of subarachnoid hemorrhage.

John William Hains, Kansas City, Kan.; University Medical College of Kansas City, 1903; died Dec. 9, 1946, aged 79, of pneumonia.

Richard Theodore Hamilton, Dallas, Texas; Howard University College of Medicine, Washington, D. C., 1893; died in Montgomery, Ala., Dec. 12, 1946, aged 77.

Alva Arling Heil, Milford, N. J.; Medico-Chirurgical College of Philadelphia, 1897; died Dec. 15, 1946, aged 73, of cerebral hemorrhage.

William George Jack, Caney, Kan.; Kansas City (Mo.) Medical College, 1900; formerly coroner of Chautauqua County; died in the Mercy Hospital, Independence, Dec. 20, 1946, aged 72, of tachycardia.

Anson Herbert Kendall, Jaffrey, N. H.; Boston University School of Medicine, 1933; member of the American Medical Association; interned at the Massachusetts Memorial Hospitals in Boston, where he served a residency; died Nov. 9, 1946, aged 48.

Junius L. Lambert, Brazil, Ind.; Central College of Physicians and Surgeons, Indianapolis, 1902; member of the American Medical Association; served as city and county health officer; died January 2, aged 86, of cerebral thrombosis.

Winford Porter Larson, Minneapolis; American Medical Missionary College, Battle Creek, Mich., and Chicago, 1904; member of the American Association of Pathologists and Bacteriologists and the Society of American Bacteriologists; professor of bacteriology and immunology at the University of Minnesota Medical School and the University of Minnesota Graduate School; died in the University Hospital January 1, aged 66, of subacute bacterial endocarditis.

Charles Dixon Smith Lovell, Lynn, Mass.; Bellevue Hospital Medical College, New York, 1892; formerly on the staff of the Union Hospital; died in the Lynn Hospital Dec. 27, 1946, aged 82, of strangulated left scrotal hernia.

Jesse G. McAfee, Dalton, Ga.; Atlanta Medical College, 1888; member of the American Medical Association; served as mayor of Dalton; chairman of the local Water, Light and Sinking Fund Commission; on the staff of the Hamilton Memorial Hospital; died Dec. 28, 1946, aged 83, of pneumonia.

Thomas J. McLauchlin, St. Matthews, S. C.; University of Georgia Medical Department, Augusta, 1889; died in Columbia Nov. 18, 1946, aged 82.

Frederic Hurst Maier, Philadelphia; Jefferson Medical College of Philadelphia, 1894; member of the American Medical Association; fellow of the American College of Surgeons; at one time on the faculty of his alma mater; past president of the Philadelphia County Medical Society; served on the staffs of Philadelphia General Hospital and St. Joseph's Hospital; died Nov. 1, 1946, aged 75, of circulatory collapse.

William Theodore Martin, *Albany,* Mo.; Rush Medical College, Chicago, 1897; member of the American Medical Association; died Dec. 24, 1946, aged 83, of heart disease.

Samuel Evans Massengill, Bristol, Tenn.; University of Nashville Medical Department, 1899; member of the American Medical Association; died Dec. 15, 1946, aged 75, of coronary thrombosis.

Robert Gilbert Moore, Hazlet, N. J.; Queen's University Faculty of Medicine, Kingston, Ont., Canada, 1902; died in the Dr. E. C. Hazard Hospital, Long Branch, Dec. 17, 1946, aged 66, of coronary thrombosis.

Elijah Marion Moseley ⊕ Rusk, Texas; Barnes Medical College, St. Louis, 1900; for many years county health officer; died Dec. 31, 1946, aged 73, of cerebral hemorrhage.

Henry Albert Nigg, Merrill, Iowa; State University of Iowa College of Medicine, Iowa City, 1888; died in Council Bluffs Dec. 2, 1946, aged 83.

Louis Alfred Palmer, Savannah, Ga.; Northwestern University Medical School, Chicago, 1920; fellow of the American College of Surgeons; for twenty-eight years associated with the U. S. Public Health Service, in which he had risen to the position of senior surgeon; died at the Mayo Clinic, Rochester, Minn., Dec. 13, 1946, aged 54, of recurrent lymphoblastoma.

Flavius Ogburn Plunkett ⊕ Lynchburg, Va.; University College of Medicine, Richmond, 1911; member of the South Atlantic Association of Obstetricians and Gynecologists; fellow of the American College of Surgeons; past president of the Virginia Society of Obstetricians and Gynecologists; formerly vice president of the Medical Society of Virginia; served during World War I; affiliated with the Virginia Baptist Hospital, where he died Dec. 18, 1946, aged 60, of cerebral hemorrhage.

John Harvey Proctor, Milford, N. H.; Dartmouth Medical School, Hanover, 1901; died in Concord recently, aged 74.

Joseph Record ⊕ Beaumont, Texas; Fort Worth School of Medicine, Medical Department of Fort Worth University, 1911; veteran of the Spanish-American War; on the staffs of Hotel Dieu and St. Therese hospitals; vice president of the First Federal Savings and Loan Association; died January 14, aged 70, of uremia.

Byrd Smith Rhea, Lebanon, Tenn.; Vanderbilt University School of Medicine, Nashville, 1901; died in Ormond, Fla., Dec. 23, 1946, aged 72.

Edwin Z. Ruth, Stouchsburg, Pa.; Jefferson Medical College of Philadelphia, 1909; member of the American Medical Association; affiliated with St. Joseph Hospital in Reading; died Dec. 19, 1946, aged 61, of coronary occlusion.

Joseph H. Saye, Sharon, S. C.; College of Physicians and Surgeons, Baltimore, 1885; honorary member of the South Carolina Medical Association; member of the American Medical Association; served as mayor of Sharon, member of the state house of representatives, school trustee and chairman of the York County Permanent Road Commission; president of the First National Bank; affiliated with the York County and St. Philip's Mercy hospitals; died Dec. 27, 1946, aged 84, of heart disease.

Philip H. Schoen ⊕ New Albany, Ind.; Kentucky School of Medicine, Louisville, 1898; for many years secretary of the Floyd County Medical Society; formerly treasurer of the school board; on the staff of St. Edward's Hospital; died January 20, aged 76, of arteriosclerotic heart disease.

Hugh Robert Schofield ⊕ Chicago; the Hahnemann Medical College and Hospital, Chicago, 1901; died in Los Angeles January 12, aged 71.

Lieut. August P. Laudicina
M. C., A. U. S., 1914-1944

Walter B. Simpson, Jefferson City, Mo.; University of Louisville (Ky.) Medical Department, 1891; for many years mayor of Edina; died January 15, aged 78, of arteriosclerotic myocarditis.

William Ewing Sinclair, Orlando, Fla.; University of Toronto Faculty of Medicine, Toronto, Ont., Canada, 1914; member of the American Medical Association and the American Academy of Pediatrics; specialist certified by the American Board of Pediatrics; served with the Royal Canadian Army during World War I; affiliated with the Orange General Hospital; died Dec. 30, 1946, aged 55, of coronary thrombosis.

Henry Galen Snyder ⊕ Seneca, Kan.; Rush Medical College, Chicago, 1903; on the staff of the Seneca Hospital; served during World War I; died Dec. 21, 1946, aged 66, of coronary thrombosis.

Frederick Edward Sperry, Buffalo; University of Buffalo School of Medicine, 1910; member of the American Medical Association; served with the British Expeditionary Forces during World War I; examining physician and surgeon for the New York Central Railroad; on the staff of the Millard Fillmore Hospital, where he died Dec. 6, 1946, aged 60, of cerebral hemorrhage.

Eugene Aaron Spitz, Chicago; Northwestern University Medical School, Chicago, 1906; died Dec. 28, 1946, aged 64.

Joseph Augustus Stegmenn Jr., Cape May, N. J.; Hahnemann Medical College and Hospital of Philadelphia, 1912; died Dec. 14, 1946, aged 56, of pulmonary infarction and coronary sclerosis.

Emil Synovec, Pierce, Neb.; University of Nebraska College of Medicine, Omaha, 1943; interned at St. Elizabeths Hospital in Washington, D. C.; began active duty as a first lieutenant in the medical corps, Army of the United States, in January 1944; released from active duty in October 1946 with the rank of captain; died in Erick, Okla., January 7, aged 38, of heart disease.

Joseph Charles Thurman, Denver; Barnes Medical College, St. Louis, 1894; died Dec. 19, 1946, aged 79, of coronary thrombosis.

Lucius Newton Todd ⊕ Augusta, Ga.; University of Georgia Medical Department, Augusta, 1915; professor of tuberculosis at his alma mater; physician in charge of the Wilhenford Unit of the University Hospital; died Dec. 12, 1946, aged 56, of pulmonary tuberculosis.

Howard Pleas Wheeler, Georgetown, Texas; University of Texas School of Medicine, Galveston, 1932; member of the American Medical Association; served during World War II; died January 20, aged 37, in an automobile accident.

Frank A. Wiley, Earlville, Ill.; Rush Medical College, Chicago, 1888; served on the school board for many years and as member of the library board; member of the American Medical Association; died January 8, aged 80, of cerebral hemorrhage and pneumonia.

KILLED IN ACTION

August Peter Laudicina, St. Louis; St. Louis University School of Medicine, 1936; member of the American Medical Association; interned at St. Mary's Group of Hospitals in St. Louis and St. Louis County Hospital in Clayton, Mo.; began active duty as a first lieutenant in the medical reserve corps of the U. S. Army in 1941; assigned to the defense of the Philippines, embarking for overseas duty on Nov. 1, 1941 and arriving in Manila Nov. 18, 1941; assigned to station hospital at Fort McKinley as chief of obstetric and gynecologic section; at outbreak of war was assigned to General Hospital number 1, doing major surgery; ordered into Bataan Dec. 24, 1941; recommended for promotion to captain before the surrender of Bataan; a prisoner of war of the Japanese; was drowned in the South China Sea Oct. 24, 1944, aged 30, when the ship on which he was being transported was sunk.

Foreign Letters

PARIS

(From Our Regular Correspondent)

Feb. 20, 1947.

Antidotal Property of Filtrates of Actinomyces Griseus

At the latest meeting of the Academy of Sciences G. Ramon, C. Levaditi, R. Richou and Miss Henry reported the results of their research on the antidotal property of the filtrates of Actinomyces griseus (Waksman) as regards diphtheria and staphylococcic exotoxins. In a mixture of equal parts of this filtrate and of staphylococcic toxin (kept in an incubator at 37 C.) 200 hemolytic doses of the toxin are completely destroyed within six hours; as regards certain filtrates, the destruction of the staphylococcic toxin is complete after three hours. On guinea pigs they obtained the complete destruction of 50 fatal doses of diphtheria toxin mixed with 0.9 cc. of an Actinomyces griseus filtrate, the mixture having been kept at 37 C. for twenty-four hours with certain filtrates this result is obtained after ten hours. The antidotal property of the filtrates (from which streptomycin is derived) is more stable to heat than that of Penicillium notatum; it does not begin to diminish appreciably until after half an hour's heating at 75 C. and it is completely destroyed at 100 C. On the contrary, these filtrates exposed to a temperature of less than 37 C., at 18 C. or even 4 C. retain their antidotal power; the effect occurs more slowly but is complete; for instance, in the case of diphtheria toxin after forty-eight hours at a temperature of 4 C. The addition of 0.03 cc. of formaldehyde solution to 100 cc. of filtrates does not alter essentially the antidotal property. The addition of human serum to the filtrates lessens the antidotal action on the staphylococcic toxin without preventing it; on the contrary, the action of the same filtrates on diphtheria toxin, with an admixture of human serum, lessening it considerably, renders it even incomplete; after eight days the presence of toxin is still noted in the mixture of filtrates, toxin and serum. It is therefore necessary to conduct further research in order to extract from the filtrates the antidotal principle in a form as active and as pure as possible and also, by fractionating the serums in their various components, to study their influence on the isolated, pure antidotal principle

Titration of Streptomycin by the Quick Method of Janus Green

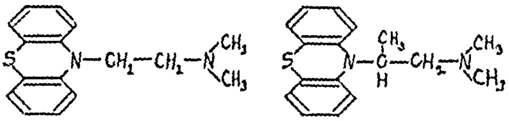
Mr. Prevot has presented to the Academy of Medicine the results of the quick titration of streptomycin. By using a culture of Clostridium butyricum he found that 0.31 cc. of a fresh culture of this anaerobe is inhibited by 3 micrograms of streptomycin (3 Waksman units); the result is obtained within two hours. By the same method the streptomycin sensitivity of other anaerobes has been ascertained: Clostridium welchi 130 units, Clostridium septicum 30 units, Clostridium histolyticum 36 units, Streptococcus putridus 110 units. Thus the pathogenic anaerobes appear less sensitive to streptomycin than to penicillin. As an improvement over the manual homogenization, electromagnetic homogenization is proposed.

Penicillin and Scarlet Fever

In the *Semaine des hôpitaux*, L. Justin-Besançon, H. P. Klotz and Luquet set forth their clinical observations on the effect of penicillin on the evolution of scarlet fever, which demonstrate the remarkable effectiveness on the eruption and the toxic manifestations. In 5 cases of malignant scarlet fever treated with doses averaging 200,000 units during three to four days, they saw that, under the influence of the treatment, temperature and pulse revert to the normal within two to three days; the eruption blanches rapidly; polypnea, adynamia, prostration, delirium and insomnia recede within twenty-four to forty-eight hours; oliguria ceases rapidly; only hypotension is not modified. They also verified the remarkable influence of penicillin in doses of 50,000 to 200,000 units during two to four days on the general condition and the scarlatinal glands in 5 cases of scarlet fever secondarily aggravated on about the fourth or fifth day and in 4 complicated cases (among which was 1 of scarlatinal rheumatism). The effect on the scarlatinal glands occurs quicker *than that produced by sulfonamides.* The authors have also found it necessary to maintain doses in the course of treatment in order to avoid being obliged to resort, in case of relapse, to higher doses than the former efficacious ones. In the *Bulletin médical* A. Fouet and J. Talbot confirm the remarkable effect of penicillin in 3 cases of malignant scarlet fever, 2 of which were particularly serious. One of them was treated with 2,350,000 units during fifteen days, the second with 1,650,000 units during seven days and the third, less serious, with 100,000 units; 3 of them were completely cured. The authors call special attention to the rapid action on the general condition and the complications of purely streptococcic origin.

Research on a New Series of Synthetic Antihistaminics

At a meeting on Dec. 17, 1946 of the Société médicale des hôpitaux de Paris Professor J. Hamburger and Drs. B. Halpern and C. DeBray presented the results of their pharmacodynamic and clinical experiences on a new series of synthetic antihistaminics. These new bodies derive from thiodiphenylamine; the structural formulas are:



Synthetic histamines 3015 and 3277.

These bodies have a much greater antihistaminic power than the former ones, Antergan and Neoantergan, and produce at the same time a more pronounced antagonistic action on the bronchoconstrictor and vascular effects. The antianaphylactic activity of 3277 on animals is from five to ten times superior to that of Antergan and Neoantergan.

The authors observed 6 cases of obstinate urticaria which for years resisted every form of treatment, including the former antihistaminics. They started with five doses of 0.05 Gm. taken at regular intervals during the day and after meals; on the following days three daily doses to 0.05 Gm. The posology therefore represents 1:3 and 1:4 of that of Antergan and Neoantergan. Toleration is excellent, save for a tendency to drowsiness, which has been noted by certain patients. No manifestation of digestive intolerance has been noticed even after a treatment of six weeks and more. From tweny to twenty-five minutes after absorption of the first cachet, pruritus disappears and within the following hour the eruption pales and recedes. In 2 cases the authors saw the Quincke's edema accompanying the urticaria disappear. The curative action persists as long as the patient absorbs the medication; in a number of cases twenty-four to forty-eight hours after the cessation of the treatment the sensations reappear. The exceptionally powerful experimental activity of these new synthetic antihistaminics calls for clinical experiments on a larger scale.

Miscellaneous

Professor Leriche has just been promoted to me
the Academy of Medicine; he is a professor at th
France and was already a member of the Academy

The Rockefeller Foundation has just
$350,000 (about 42 million francs) to th
Research.

DENMARK

(From a Special Correspondent)

Copenhagen, Feb. 7, 1947.

A New Domus Medica?

The headquarters in Copenhagen of the Danish Medical Association and the Danish Medical Society, known as Domus Medica, was smashed to smithereens by the Germans during their occupation of Denmark. This building was not just a center for medical activities; it had become a symbol of all that is best in Danish medicine. Hence the almost passionate determination of Danish doctors to raise it up again, if possible in an even worthier form. But the cost! In these times of upward shifting prices it is difficult to count the cost of a new building, and the estimate of three million kroner (to include furniture as well as buildings) must necessarily be tentative. The real estate and insurance might perhaps yield half a million kroner. But it is a far cry from half a million to three million; the funds required must, perhaps, be borrowed; in other words the coming generations must help to shoulder this burden. It has also been suggested that kr. 250 should be levied from each of 1,400 younger doctors and kr. 500 from each of 2,600 older doctors, so that the total would be kr. 1,650,000. According to another calculation the average income of Danish doctors is between 12,000 and kr. 13,000, and the average capital between 43,000 and kr. 44,000. The total income of Danish doctors would therefore be about 43 million kroner, and the total capital 144 million. A levy of two or three million kroner should not therefore bleed the Danish medical profession white. But this is only one aspect or solution of the problem, and it is not necessarily acceptable to the bulk of the medical profession.

Treatment of Syphilis and Gonorrhea with Penicillin

In a memorandum the Danish Ministry of Health advises the medical profession concerning the treatment of syphilis and gonorrhea with penicillin based on a statement, dated Nov. 7, 1946, by the Danish Dermatological Society. It is pointed out that the action of penicillin on syphilis being still uncertain, arsenic and bismuth should be preferred except when the disease is resistant to or the patient intolerant of them. Congenital syphilis in infants and syphilis contracted late in pregnancy should also be added to this list of exceptions. It is also recommended that the penicillin treatment of syphilis should be undertaken only by specialists. As syphilis and gonorrhea are often contracted at the same time, penicillin treatment of the latter may well mask the former. It is therefore recommended that every person who has recently acquired gonorrhea should be treated with sulfathiazole 8 to 10 Gm. daily for three days, after which some 30 to 40 per cent of the patients should be cured. The others may be given penicillin only on the observance of certain precautions and after the patient has been warned of the risk of masked syphilis. Penicillin should be given in four intramuscular injections at intervals of three hours, the dosage being 50,000 units. A single injection of 200,000 units is less certain in its effects.

The Distribution of Doctors in Denmark

At the end of 1944 there were 3,875 doctors in Denmark, whose population is 3,998,000. This corresponds to 1 doctor to every 1,031 inhabitants. But if account is taken only of the 1,800 doctors in general practice, the ratio is 1 doctor to 2,215 inhabitants. As many as 1,464 doctors in Denmark are attached to hospitals and similar institutions, and there are 754 doctors who have qualified as specialists. It is a sign of the times that less than half of all the doctors are now engaged in general practice, which only a short time ago absorbed the majority of the medical profession. Yet many are convinced that the intimate and personal contact between patient and private practitioner is worth more to the former than the mechanized and often highly technical treatment available in the most magnificently equipped modern hospitals.

When to Discharge Patients with Scarlet Fever

The chief medical officer of Copenhagen has addressed a memorandum to the general medical practitioners in his district on the time to discharge patients with scarlet fever. Under the penicillin treatment of scarlet fever as practiced in the Blegdam Fever Hospital the infectious stage of the disease is shortened to such an extent that patients can often be discharged only eight to ten days after admission. Swabs from the throats of such patients do not yield hemolytic streptococci unless there has been reinfection after discharge. Children can therefore be admitted to schools, hostels and the like as soon as they are discharged from hospital, and parents need not fear spread of the infection if and when desquamation is observed in children after their discharge.

LONDON

(From Our Regular Correspondent)

Feb. 22, 1947.

International Society of Surgery to Meet in London

The twelfth congress of the International Society of Surgery is to be held in London September 14 to 20. The topics to be discussed, with the opening speakers, are the role of penicillin in surgical practice, Sir Alexander Fleming, F.R.S.; recent advances in arteriography and venography, Professor Don Santos, Lisbon; recent advances in vascular surgery, Professor René Leriche, Paris; surgical treatment of pulmonary stenosis, Professor Blalock, Baltimore; operative treatment of fractures, Professor Danis, Brussels; results of early operations in war wounds of the lungs, Dr. Basos Ansart, Barcelona; results of heparin surgery, Dr. Crafoord, Stockholm; role of vasodilatation in arterial disease, Dr. Diez, Buenos Aires; skin defects: their repair by flaps and free skin grafts, Professor T. Pomfret Kilner; recent progress in the treatment of burns, a Russian surgeon. Members of the society who wish to take part in these discussions should send their names to the secretary, Mr. H. W. S. Wright, F.R.C.S., 9 Weymouth Street, London, W. 1.

Are We Becoming Less Intelligent as a Result of Dysgenic Breeding?

That the less intelligent have larger families than the more intelligent is an old observation. The fact has recently been investigated and given numerical precision by the Eugenics Society, which has published a paper by Sir Cyril Burt on intelligence and fertility. The result of intelligence tests which measure the standard of mental ability show a negative correlation ($r = -0.20$) between the intelligence quotient of a child and the size of the family to which it belongs. Members of larger families have on the average lower test scores than those of smaller families. At a meeting of the Eugenics Society Burt said that his investigations seemed to indicate a loss of about 2 points I. Q. on the Binet scale in a generation. This meant that children at a given age would be about four months retarded as compared with their parents at the same age. If this rate of decline continued for fifty years the number of feebleminded would be doubled and the number of scholarship winners halved. However, in the discussion Professor L. S. Penrose said that differential fertility was not a recent phenomenon, and, if it had gone on for long unmodified, that would mean that the race was becoming less intelligent. But it seemed reasonable to suppose that there were restitution factors which tended to keep intelligence at the same level. Some investigators suggested that the first born in a family were likely to be the most intelligent, the level of intelligence falling as the family grew. That would mean that in an era of large families the general intelligence would fall; but when, as now, families tended to be smaller, the result would be to raise the level of intelligence. Thus this factor would act in the opposite direction to the alleged fall in intelligence due to a differential birth rate.

Correspondence

FATALITIES ASSOCIATED WITH ANALBIS SUPPOSITORIES

To the Editor:—This is a preliminary report on fatalities associated with the use of suppositories of a bismuth salt of heptadienecarboxylic acid (diallyl acetic acid), marketed as "Analbis" and manufactured and sold by Specific Pharmaceuticals, Inc., of New York City.

The drug has been used for the past ten years in various European countries, particularly Hungary and France, for the alleviation of symptoms in acute inflammations of the throat, and preoperatively in tonsillectomies. In October 1943 the manufacturer made application to the Federal Food and Drug Administration for permission to manufacture and sell Analbis suppositories. The drug was widely distributed throughout the United States. It was also sold in Canada, Mexico, Puerto Rico, Cuba, Brazil and China. It is not included in New and Nonofficial Remedies, the official publication of the Council on Pharmacy and Chemistry of the American Medical Association. Several articles have appeared indicating its effectiveness in throat infections:

Silber, Samuel: The Treatment of Tonsillitis, Pharyngitis and Gingivostomatitis with the Bismuth Salt of Heptadienecarboxylic Acid in Cocoa Butter Suppositories, *J. Pediat.* **23:** 59 (July) 1943.

Stovin, Joseph S.: Acute Tonsillitis: Treatment by Rectal Administration of a New Bismuth Compound, *Arch. Otolaryng.* **39:** 259 (March) 1944.

Silber, Samuel: Bismuth Suppositories (Analbis) in Throat Infections, *J. Pediat.* **25:** 244 (Sept.) 1944.

Stovin, Joseph S.: Preoperative and Postoperative Care in Tonsillectomy, *Eye, Ear, Nose & Throat Monthly* **24:** 239 (May) 1945.

Perez, Eduardo R.: Tonsilitis aguda: su tratamiento con supositorios rectales de bismuto (Analbis), *Bol. Asoc. med. de Puerto Rico* **37:** 300 (Aug.) 1945.

Pharmacologic studies have been directed mainly toward the toxicity of the bismuth moiety.

On March 9, 1947 the Bridgeport *Herald* reported that 2 children had died in Norwalk, Conn., late in December 1946 following the use of Analbis suppositories. This was the first notice that the New York City Health Department had that the drug might be toxic and might even cause death. The following steps were taken immediately by the health department:

1. An investigation was made of the manufacturer's plant located in New York City. The physicians' experience reports on the drug available in the manufacturer's files were scrutinized.
2. The drug was ordered embargoed at drug wholesalers, jobbers, retail pharmacies and hospitals in New York City.
3. The export certificates for this drug were rescinded and foreign governments notified of this action.
4. This action on the part of the health department and the reason for it were released to the press. Radio newscasters also helped bring these items to the attention of the public.
5. Case records of acute hepatitis in children reported to the health department were reexamined to see if any of them were associated with Analbis medication.
6. The medical examiner of New York City was requested to reexamine his records of deaths in children with disease of the liver to determine if any of these cases had had Analbis medication.
7. Telegrams were sent to city and state health officers asking whether they had any reports of illness or fatalities following the use of Analbis.

As a result of this action the health department acquired information that there had been at least 11 deaths, 6 of them in New York City, that were associated with the use of this drug. All the deaths occurred in children. There were 4 additional deaths reported in which the use of Analbis was suspected.

From the reported cases the following symptoms appear to be characteristic: vomiting, drowsiness and pain in the abdomen, especially in the right upper quadrant. In several instances there were convulsions. In all cases there was rapid progression to coma and death in two to five days following the first administration of the drug. At autopsy there was a decided swelling of the liver, with necrosis of the liver cells and evidence of exudation of fluid into other organs. There was no stomatitis or enterocolitis as is usual in bismuth poisoning. In 2 cases in which chemical analysis of the organs was made no bismuth was found. The following case history is illustrative:

A white girl aged 2 years became acutely ill. The temperature rose to 104 F. A physician was called, and he made a diagnosis of acute follicular tonsillitis. He prescribed Analbis suppositories, "children's size." The child was given one suppository that night and another the following morning. The temperature came down, and the child felt better. That night the child developed convulsions, and the physician was again called. There was no fever at this time. The physician took the child to the hospital at 2:45 a. m. of the third day. At the hospital the child had twitches of the mouth, left side of the body and extremities. Reflexes were unobtainable. The child was stuporous and reacted only to painful stimuli. She was given half an ampule of nikethamide and half an ampule of caffeine with sodium benzoate. Later she was given 25,000 units of penicillin and a retention enema of 5 grains (0.3 Gm.) of chloral hydrate. She was also given 1 cc. of adrenal cortex extract and an intramuscular injection of 2 Gm. of magnesium sulfate in a 25 per cent solution. She was kept in an oxygen tent throughout the hospital stay.

The child died at 6:50 a. m. of that day, thirty-six hours after the initial use of the suppository. At postmortem the liver was found to be enlarged and edematous, and there was necrosis of liver cells. Toxicologic examination of the organ did not disclose any bismuth.

The Analbis suppositories were made in two strengths: one for children, colored white, containing 67.5 mg. of the drug, and the other for adults, colored orange, containing double this amount. The two types of suppositories were the same size, wrapped in plain metal foil and placed in unlabeled vials. Two vials were put in a small box which was labeled either "Children's Size" or "Adult Size." The pharmacist received his supply of the drug in these boxes. Once the suppositories were removed from the box there was no means of distinguishing them other than by color. This color was not discernible through the foil. There was no label and, if one was not familiar with the significance of the color, confusion regarding dosage could readily occur. Since the adult suppositories contained twice the amount of drug that was present in the children's size, and since the dose advised for a very young child was one half of the children's suppository, there was a possibility of as much as fourfold overdosage. The professional sample box contained a "child" and an "adult" package. Interchange of the suppositories might have easily occurred. In several instances in which death occurred only one or two suppositories were given within a period of twenty-four hours. Whether the fatalities were due to intrinsic toxicity of the drug, to overdosage, to idiosyncrasy or to synergistic action with other drugs, such as the anesthesia given for tonsillectomy, has not been determined up to the present time. The New York City Department of Health is continuing its studies on the effects of the drug.

On February 12 the manufacturer voluntarily stopped the production and distribution of Analbis suppositories and requested wholesalers and jobbers to return any stocks they may have had on hand. Unfortunately, no notice of this action was sent to the New York City Department of Health nor was any other type of publicity given. Investigation by the department of health revealed that on March 11 the drug was still available *throughout the city.* From March 12 to March 20 the department seized over 4,000 packages of these suppositories in hospitals and drug establishments. Samples which were widely distributed to physicians have not yet been recalled by the manufacturer.

For many years there have been provisions in the Sanitary Code of the City of New York requiring the reporting of all cases of drug poisoning. Similar provisions exist in codes of other cities and states. If any untoward reaction following the administration of a drug is noted and reported at once to local health authorities a prompt investigation can be made and further harm prevented. The manufacturer of pharmaceutical preparations has the definite responsibility of stopping manufacture and notifying local health officials as soon as he becomes aware that unusual reactions follow the use of his product.

The exact mechanism by which death was produced following the administration of Analbis has not yet been determined. One thing, however, is certain. Hospitals, drug manufacturers, pharmacists and physicians all must recognize their responsibility to report without delay cases of drug poisoning. Once poisonings have been reported, stocks of the dangerous drugs can be impounded. It is only through prompt notification that health departments are enabled to use effectively their powers to prevent such tragedies as those here reported.

Israel Weinstein, M.D., New York.
Commissioner of Health.

COMPARISON OF ROENTGEN TECHNICS IN TUBERCULOSIS

To the Editor:—Although self analysis is a most laudable form of criticism, it can sometimes take such an extreme form that it only defeats its own purpose. The investigation to determine the relative diagnostic efficiency of the various roentgen modalities employed in mass x-ray surveys for tuberculosis case finding by Birkelo, Chamberlain, Phelps, Schools, Zacks and Yershulamy (The Journal, February 8) resulted in the comment that no one technic was superior to the others. In itself this conclusion might lead one to accept any one method of roentgen survey as efficient as another. An examination of the results, however, does not entirely bear this out, for it revealed an astonishingly wide variation in interpretation by various examiners and by the same examiners at various times. One interpreter found 47 cases positive for tuberculosis, while four of the interpreters agreed on only 17 cases. Twenty per cent of the films which were called positive by one reader were called negative by another. The same films reread by the same examiner at a different date showed a reduction of 7 per cent in positive cases, as read originally, but revealed an addition of 19 new cases which were not recognized before.

This variability of interpretation was not traceable to any particular technic of roentgenography. Hence one can only conclude that this lack of uniformity was due in great part if not in whole to the element of human equation. That this factor enters into the field of roentgen interpretation, as it does in every endeavor, goes without saying. That it need appear to the extent indicated in this study is most unlikely. My experience with such projects (a survey of 2,840 persons is being prepared for publication) does not run parallel with the mentioned study. In our survey, employing five qualified interpreters, there was less than a 2 per cent variation in readings.

The reading of mass survey films is quite different from individual x-ray interpretation. In the latter much time is spent on the detailed study of the structure and form of abnormal shadows in an attempt to come as closely as possible to an absolute diagnosis. In the former the element of time and the absence of individual case interest exacts from the examiner an impersonal response. If his threshold of acuity is high and he is overly alert, he will interpret any minor disconfiguration, such as a slight peribronchial thickening or increased vascular marking, as indicative of pathologic change. If his threshold is low and his faculties not acutely tuned to intercept the shadows that come quickly before him, he will overlook many borderline changes and consider the film negative. The variation in results between two such interpreters will be considerable.

Experience with mass film surveys teaches one that the receptive mechanism for viewing and interpreting chest film shadows must be at a fine level of equilibrium, undisturbed by outside influence, and ever cognizant of what the mind is looking for. For this purpose it is necessary to have before one a simple mental classification into which one can quickly tabulate the abnormal film. Under the most exact and time consuming interpretation an absolute diagnosis is often at best only a supposition. Why should one attempt an etiologic diagnosis in rapid fire miniature or substandard technic? The x-ray film, particularly in surveys, is only a screen in tuberculosis case finding. It can only pick out the normal from the abnormal. It is the important clinical follow-up investigation that must tag the positive carrier. Hence the interpreter should tabulate his findings as (1) a normal or negative chest, (2) pulmonary abnormality significant in character and suggestive of tuberculous disease, (3) pulmonary pathologic change suggestive of tuberculous disease but not significant in character (healed scars, calcified lesions and the like), (4) pulmonary disease significant in character but apparently nontuberculous and (5) nonpulmonary disease of the chest.

Mass chest x-ray surveys are valuable weapons in the fight against tuberculosis. Used judiciously as a screening method to reach every individual it will hasten the day when this disease will be a minor factor in morbidity and mortality statistics of the nation.

Maurice Kovnat, M.D., New York.

SENSITIVITY TO FURACIN

To the Editor:—The paper entitled "Use of 5-Nitro-2-Furaldehyde Semicarbazone in Dermatology" (The Journal, February 1) aroused great interest here, especially in view of our unfortunate first experience with Furacin Soluble Dressing.

The patient was a white man who had no known allergy and who had never exhibited any skin sensitivity. He had sustained a fracture of the calcaneus several months previously. An area of pressure necrosis about the medial malleolus had developed from the cast, and the resulting infected ulcer was extremely slow to heal, little improvement having been obtained from local penicillin. Furacin dressings had finally been used, and a clean granulating base, suitable for grafting, had developed in ten days. The pinch grafts yielded approximately a 50 per cent take, Furacin having been used on all dressings subsequent to grafting.

At this point, in September 1946, the patient was consigned to care at this activity with the recommendation that Furacin dressings be continued. During the sixth week from the onset of the Furacin therapy, when a very small area remained to be epithelized, a slight erythema was noted at the daily dressing. By the following day the entire area developed an angry erythema and was covered with small vesicles. The donor site on the opposite thigh, which had been dressed with Furacin, became erythematous and developed a few vesicles also. In addition there was a generalized pruritus and urticaria, and the patient experienced headache and nausea. Only moist boric acid dressings were then used, but the grafts and surrounding epithelized tissue were lost completely, so that the resulting ulcerated area was approximately the size of the ulcer which had existed prior to the use of Furacin. After a prolonged period of conservative therapy this area finally epithelized.

L. J. Morin, Lieutenant (jg), (MC), U.S.N.R.
Dispensary, Portsmouth Naval Shipyard,
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Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Workmen's Compensation Act: Evidence; Right to Ignore Medical Theories.—The petitioner suffered a loss of vision after spending a day spreading hot tar over a large parking area. The tar gave off a considerable quantity of smoke and fumes. Subsequent examinations revealed a diseased tooth, and a culture of the pus of the tooth disclosed a Streptococcus viridans infection. The Workmen's Compensation Bureau held that the eye condition, uveitis, was caused by the working conditions, not the infection, and the employer accordingly appealed to the Supreme Court of New Jersey.

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One physician definitely stated that uveitis is always due to a constitutional cause and another conceded that the cause is "usually constitutional." Dr. Conrad Berens in his treatise on "The Eye and Its Disease" states that infected teeth are commonly believed to be responsible for focal reactions of the eye.

In the light of such medical testimony produced before the compensation bureau, and in view of the opinions of the medical text writers, the Supreme Court concluded that the hypothesis that the loss of vision was caused by the conditions of petitioner's employment was less probable than the hypothesis that it was due to uveitis brought on by the Streptococcus viridans infection. Since the petitioner did not sustain the burden of proof, the court therefore concluded that the award in his favor was erroneous. Accordingly the award had judgment in favor of the petitioner was reversed.—*Thackston v. Landsdell Co., 49 A (2d) 140 (New Jersey, 1946).*

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In November 1942 the plaintiff accidentally fell into a manhole and was treated for minor injuries at the "company hospital." He filed no claim for compensation at that time, however, and continued working until March 1944. In May 1944 he filed a claim for compensation benefits. The sole issue presented on appeal was whether or not there was sufficient evidence to support a finding that the plaintiff had "good cause" for failing to file his claim within the six month period required by the workmen's compensation act. The ground relied on by the plaintiff as justifying his eighteen month delay was that he had been told by physicians on whom he relied that his condition was due to rheumatism and heart trouble caused by syphilis and that not until shortly before he filed his claim was he definitely advised that his condition was due to the injuries received by him on Nov. 12, 1942. He alleged that he had relied on this advice, that but for such reliance he would have taken steps to learn, and would in all probability have learned much sooner, that his disability was caused by the injuries received in said fall and that he would then have filed his claim with the Industrial Accident Board without delay.

It has been held a number of times by our courts, said the court of appeals, that the advice of a physician to the effect that injuries are not of a serious nature but are temporary and trivial is sufficient to show good cause for the delay in filing a claim where it is shown that the claimant believed and relied on the statements made by the physician. The plaintiff testified that in February 1944 he was told that he had a heart condition probably due to the accidental injuries he had received in November 1942 but that he was later advised by a number of physicians employed by the shipbuilding company and its insurer that the discomfort and shortness of breath from which he was suffering were due to rheumatism rather than to his accidental injuries. Dr. Horace Feagan, who was employed by the employers' insurer and who treated him for several months in the early part of 1943, told him that the injuries had nothing to do with the discomfort he was suffering and advised him to have his teeth extracted. It required more than a year to have his teeth extracted and to secure dentures, and his condition became worse instead of better. In the latter part of April 1944 he was examined at the Scott White Clinic in Temple, Texas, and was advised that his trouble was due to a heart condition caused by syphilis. In May 1944 he was definitely advised that his disability was due to the accident, and he then employed an attorney, who filed his claim for compensation with the Industrial Accident Board.

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Medicine, Baltimore

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Human Toxoplasmosis: Clinicopathologic Study with Presentation of 5 Cases and Review of Literature. W. P. Callahan Jr., W. O. Russell and M. G. Smith.—p. 343.
Osteomalacia and Late Rickets: Various Etiologies Met in the United States, with Emphasis on That Resulting from a Specific Form of Renal Acidosis, Therapeutic Indications for Each Etiologic Subgroup, and Relationship Between Osteomalacia and Milkman's Syndrome. F. Albright, C. H. Burnett, W. Parson, E. C. Reifenstein Jr. and A. Roos.—p. 399.

Minnesota Medicine, St. Paul

29:1073-1184 (Nov.) 1946

Military Diseases in Civilian Life: Preventive Procedures and Practical Suggestions. G. W. Anderson.—p. 1105.
Bacillary Dysentery. J. F. Borg.—p. 1108.
Planning the Hospital for Community Service. G. L. Davis.—p. 1112.
Medical Service in Community Hospital. F. H. Arestad.—p. 1117.
Modern Hospital Construction. G. R. Magney.—p. 1121.
Survey of Hospital Facilities. V. O. Wilson.—p. 1126.
Modern Treatment of Empyema. T. J. Kinsella.—p. 1128.

New England Journal of Medicine, Boston

235:839-884 (Dec. 12) 1946

*Trichinosis: Review of Cases in Massachusetts from 1936 to 1945. R. E. Ober.—p. 839.
*Tropical Diseases in Veterans of World War II. J. J. Sapero.—p. 843.
Notes on Treatment of Tetanus. J. R. Graham and T. M. Scott.—p. 846.
Plastic Surgery in a Military Hospital. R. C. Tanzer.—p. 852.
Physiology (concluded). H. E. Hoff.—p. 855.
Acute Coronary Thrombosis, with Cardiac Infarction.—p. 879.
Ectopic Pregnancy.—p. 881.

Trichinosis in Massachusetts.—Ober says that in the ten year period 1936 to 1945 a total of 287 cases of trichinosis were reported to the Massachusetts Department of Public Health, with death in 7 cases, a mortality of 2 per cent. Seventy of these cases were reviewed for epidemiologic, clinical and laboratory data and compared with the accepted clinical picture of the disease. The clinical findings most frequently noted were fever,

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Medicine, Baltimore

25:343-480 (Dec.) 1946

Human Toxoplasmosis: Clinicopathologic Study with Presentation of 5 Cases and Review of Literature. W. P. Callahan Jr., W. O. Russell and M. G. Smith.—p. 343.
Osteomalacia and Late Rickets: Various Etiologies Met in the United States, with Emphasis on That Resulting from a Specific Form of Renal Acidosis, Therapeutic Indications for Each Etiologic Subgroup, and Relationship Between Osteomalacia and Milkman's Syndrome. F. Albright, C. H. Burnett, W. Parson, E. C. Reifenstein Jr. and A. Roos.—p. 399.

Minnesota Medicine, St. Paul

29:1073-1184 (Nov.) 1946

Military Diseases in Civilian Life: Preventive Procedures and Practical Suggestions. G. W. Anderson.—p. 1105.
Bacillary Dysentery. J. F. Borg.—p. 1108.
Planning the Hospital for Community Service. G. L. Davis.—p. 1112.
Medical Service in Community Hospital. F. H. Arestad.—p. 1117.
Modern Hospital Construction. G. R. Magney.—p. 1121.
Survey of Hospital Facilities. V. O. Wilson.—p. 1126.
Modern Treatment of Empyema. T. J. Kinsella.—p. 1128.

New England Journal of Medicine, Boston

235:839-884 (Dec. 12) 1946

*Trichinosis: Review of Cases in Massachusetts from 1936 to 1945. R. E. Ober.—p. 839.
*Tropical Diseases in Veterans of World War II. J. J. Sapero.—p. 843.
Notes on Treatment of Tetanus. J. R. Graham and T. M. Scott.—p. 846.
Plastic Surgery in a Military Hospital. R. C. Tanzer.—p. 852.
Physiology (concluded). H. E. Hoff.—p. 855.
Acute Coronary Thrombosis, with Cardiac Infarction.—p. 879.
Ectopic Pregnancy.—p. 881.

Trichinosis in Massachusetts.—Ober says that in the ten year period 1936 to 1945 a total of 287 cases of trichinosis were reported to the Massachusetts Department of Public Health, with death in 7 cases, a mortality of 2 per cent. Seventy of these cases were reviewed for epidemiologic, clinical and laboratory data and compared with the accepted clinical picture of the disease. The clinical findings most frequently noted were fever, malaise, orbital edema and muscle pains. Eosinophilia was the most constant laboratory finding but must not be considered diagnostic in itself. The control of trichinosis can be guaranteed only by the complete cooking of all pork and pork products.

Tropical Diseases in Veterans.—Sapero thinks that of the diseases usually termed "tropical" those of a major occurrence in men who served overseas, in order of frequency, were dysentery, malaria, infectious hepatitis and dengue. There is small likelihood, despite the high wartime prevalence of dysentery, that chronic disability will occur in large numbers of veterans or that there will be a significant spread of bacillary infections in civilian communities. The end of the once serious problem of malaria appears to be in sight. The vast majority of recurring malarial infections have expended themselves, but the situation still does not warrant a relaxation of control efforts. The large scale occurrence of infectious hepatitis during wartime may result in dissemination incident to the therapeutic use of blood and blood derivatives. Intensive measures have been undertaken to prevent the further occurrence of smallpox epidemics. Modern rapid civilian air travel presents a danger of smallpox introduction against which the surest countermeasure for civilian communities is comprehensive smallpox vaccination.

North Carolina Medical Journal, Winston-Salem

7:633-692 (Dec.) 1946

Cecal Granulomas. C. M. Caravati.—p. 633.
Malignant Metastasis to Thyroid Gland. R. B. McKnight.—p. 636.
Analysis of Blood Counts in 1,740 "Healthy" North Carolinians. Lucile W. Hutaff and G. T. Harrell.—p. 641.
Benign Postoperative Strictures of Bile Ducts: Their Etiology and Surgical Management. W. S. Cornell.—p. 645.
Interest in Psychiatry as Part of Medical Practice. D. A. Young. —p. 648.
Malaria as Complicating Factor in Surgery. H. E. Feather and J. F. Marshall.—p. 650.
Report of Case of Influenzal Meningitis Treated with Sulfadiazine and Streptomycin with Recovery. J. B. Sidbury and E. S. King.—p. 652.

Pennsylvania Medical Journal, Harrisburg

50:217-344 (Dec.) 1946

*Primary Sarcoma of Bone: Analysis of 71 Cases. T. A. Shallow and F. B. Wagner Jr.—p. 233.
Renal Infections: Their Etiology, Diagnosis and Management. J. C. Birdsall.—p. 240.
Recognition and Treatment of Venous Thrombosis (Phlebothrombosis and Thrombophlebitis), with Particular Reference to Prevention of Pulmonary Embolism. L. Kaplan.—p. 247.

Primary Sarcoma of Bone.—Shallow and Wagner present a critical analysis of 71 primary sarcomas of bone encountered in the Jefferson Medical College Hospital during the past twenty-five years. There were 35 osteogenic sarcomas, 11 chondrosarcomas, 3 fibrosarcomas, 1 liposarcoma, 1 adamantinoma, 8 Ewing's tumors and 12 multiple myelomas. The history of trauma in the majority of cases in the series suggests that it may assume some role in the genesis of these tumors. Arteriography may aid in differentiation between benign and malignant tumors but is not infallible. Biopsy, also not infallible, is the most reliable method of reaching a conclusion and is most safely performed in lesions of the extremities by frozen section examination of tissue removed by the double tourniquet technic. Since metastasis probably occurs early, prompt radical surgery offers the best chance of cure. Roentgen therapy and chemotherapy with lead, iron ascorbate and heptaldehyde are useful adjuncts. The prognosis is best in chondrosarcoma and fibrosarcoma, next best in osteogenic sarcoma and Ewing's tumor, and uniformly fatal in multiple myeloma.

Psychiatric Quarterly, Utica, N. Y.

20:549-736 (Oct.) 1946

Search for the Beloved. N. Fodor.—p. 549.
Cornelian Corner. J. C. Moloney.—p. 603.
Military Neuropsychiatry—The Next Time. J. A. Brussel.—p. 610.
Prepsychotic Personality in Dementia Precox: Study of 100 Cases in the Navy. L. Bellak and Blanche Parcell.—p. 627.
Frontiers of Social Psychiatry. D. E. Cameron.—p. 638.
Masturbation Fantasies. G. Roheim.—p. 656.
Atropine Treatment of Hypoglycemic Fatigue States. J. D. Frank. —p. 674.
Five Aims of the Psychoanalytic Patient. E. Bergler.—p. 684.

Psychoanalytic Quarterly, Albany, N. Y.

15:419-578 (Oct.) 1946

Sleep, The Mouth and the Dream Screen. B. D. Lewin.—p. 419.
Constant Elements in Psychotherapy. C. P. Oberndorf.—p. 435.
Fetishism and Object Choice in Early Childhood. M. Wulff.—p. 450.
On Querulence. Melitta Schmideberg.—p. 472.
Oedipus Complex and Infantile Sexuality. G. Róheim.—p. 503.

Public Health Reports, Washington, D. C.

61:1833-1868 (Dec. 20) 1946

Symptoms of the Psychopath. H. Cason.—p. 1833.
Gastroenteritis Aboard Ship: Common Types Encountered, and Prevention and Control of Outbreaks. W. A. Meyers.—p. 1853.

61:1869-1904 (Dec. 27) 1946

Competitive Examinations for Regular Corps of United States Public Health Service.—p. 1869.
Story of National Leprosarium: United States Marine Hospital, Carville, Louisiana. G. H. Faget.—p. 1871.

South Carolina Medical Assn. Journal, Florence

42:295-324 (Nov.) 1946

Intestinal Obstruction. G. E. Thompson.—p. 295.
Practical Suggestions for Care of Obstetric Patients. A. L. Rivers. —p. 298.
Commentator's View of Medical Dilemma. U. Close.—p. 302.
Remarks and Announcements. K. M. Lynch.—p. 305.

42:325-354 (Dec.) 1946

Treatment of Hemothorax and Its Complications in Thoracic Injuries. E. F. Parker and T. H. Burford.—p. 325.
Post Hoc Sed Non Propter Hoc. R. M. Pollitzer.—p. 330.
Obesity in General Practice. W. T. Hendrix.—p. 332.

Southern Surgeon, Atlanta, Ga.

12:329-388 (Dec.) 1946

Surgical Complications of Duodenal Ulcer. R. L. Sanders.—p. 329.
*Regional Enteritis: Report of Case Complicating Pregnancy with Review of Literature. D. L. Williams and D. R. Davis.—p. 342.
*Significance of Chronic Urethritis in Women. E. Burns and A. J. Butt. —p. 352.
Vaginal Hysterectomy. O. S. Cofer.—p. 358.

Regional Enteritis Complicating Pregnancy.—Williams and Davis point out that the lesion which since Crohn's report in 1932 has been known as regional enteritis was previous to that time reported under the heading benign intestinal granuloma. Other terms applied to it include regional ileitis, ileojejunitis, segmental ileitis, Crohn's disease, nonspecific granuloma, phlegmonous enteritis and regional enteritis. Reviewing the *Cumulative Index Medicus* the authors found that heretofore there has been no report in the medical literature of regional enteritis complicating pregnancy. In this paper they present a case which became initially symptomatic at the period of viability and passed successively through the four classic stages of the disease. Normal spontaneous delivery occurred five weeks prematurely; the patient was treated successfully on the twenty-second postpartum day by primary resection of the diseased portion of bowel and subsequently made an uneventful recovery.

Chronic Urethritis in Women.—Burns and Butt define chronic urethritis as a condition in which pathologic inflammatory changes occur in the urethra and vesical trigone which appear granular on inspection and which produce many annoying urinary symptoms, chiefly irritation of the bladder and pain. The diagnosis is not difficult if complete urologic studies are made in suspected cases. The disease can be cured within six to eight weeks by irrigating the bladder, dilating the urethra with sounds and instilling solutions of silver nitrate into the posterior urethra. Predisposing factors may be responsible for recurrences. Consideration should be given to possible disease of the pelvic organs, especially the cervix, as well as to distant foci of infection. All such foci should be removed.

Virginia Medical Monthly, Richmond

73:539-592 (Dec.) 1946

Forty per Cent of Counties in United States Have No Registered Hospital. J. S. Lawrence.—p. 541.
Sulfaguanidine Ointment in Treatment of Burns. R. E. Kelly.—p. 546.
Pneumococcic Pneumonia with Toxic Neutropenia Successfully Treated with Penicillin: Case Report. J. L. Chesnut.—p. 554.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Tuberculosis, London

40:109-138 (Oct.) 1946

Bronchopulmonary Abnormalities. A. F. Foster-Carter.—p. 111.
*Tropical Eosinophilia or Pulmonary Acariasis. G. A. M. Hall.—p. 124.

Tropical Eosinophilia or Pulmonary Acariasis.—Hall presents the histories of 2 patients with distressing pulmonary symptoms and high eosinophil cell counts. One patient had never resided in the tropics. The working conditions of both patients prior to the development of their symptoms had included the passing of many hours in hot, damp and dusty storerooms. Arguments are presented in favor of a mite infestation as the cause of the "new disease entity" of Weingartner, and it is suggested that the condition merits the name of "pulmonary acariasis."

Leprosy Review, London

17:69-100 (Oct.) 1946

Atlas of Leprosy. D. C. Danielssena and C. W. Boeck.—p. 74.
Some Observations on Role of Allergy in Leprosy: Part II. Allergy and the Macular Series. T. F. Davey.—p. 75.
*Diasone in Treatment of Leprosy. E. Muir.—p. 87.
*Promin Therapy. L. H. Wharton.—p. 96.

Diasone in Leprosy.—Following a test of diasone in the treatment of 83 patients in the West Indies, which was previously described, Muir made a further test on 12 patients. The dosage is regulated till a maximum of 12 Gm. a week for three weeks in the month is reached. Beneficial results were obtained in all cases, though it is still too early to evaluate the final results.

Promin Therapy in Leprosy.—Wharton selected for promin therapy 7 young adults with advance lepromatous lesions, who were rapidly going downhill in spite of many years of the orthodox chaulmoogra oil treatment. The course consisted of 2 Gm. intravenously daily for the first six days and then one day's rest. The dose was gradually increased by 1 Gm. weekly until a maximum of 5 Gm. was reached. It was then continued at 5 Gm. daily throughout the year. At the end of every six weeks of treatment one week's rest was given. So great was the improvement at the end of six months that the other lepromatous patients demanded the drug. The 70 patients who have had six months' treatment with the drug have all shown remarkable improvement, especially as regards the healing of chronic ulcers. The author thinks that the beneficial results obtained by promin are due to the fact that the drug acts on the lepromatous tissue which is destroyed, with the formation of fibrous connective tissue. In the process leprous cells are destroyed, and the reduction in bacilli is due to their being unable to multiply. Promin is a safe drug to give over long periods.

Praxis, Bern

35:777-804 (Nov. 21) 1946

Keeping Medical Secrets with Regard to Method of Using Films of Fluoroscopic Images for Screening Out Persons with Pulmonary Disease. P. H. Rossier and C. Maier.—p. 777.
Organization of Method of Using Films of Fluoroscopic Images for Screening Out Persons with Pulmonary Disease in Canton of Zurich (Economic-Social Points of View). E. Brunner.—p. 780.
Diagnostic Clarification Concerning Method of Using Films of Fluoroscopic Images for Screening Out Persons with Pulmonary Disease. R. Hegglin.—p. 783.
*Statistical Results of Using Fluoroscopic Films for Screening Out Pulmonary Disease. F. Kollbrunner.—p. 785.
Alcohol and Tuberculosis. M. Roch.—p. 790.
Tuberculosis of Genitals in Women. F. Chatillon.—p. 792.
Tuberculosis of Peritoneum. R. Montant.—p. 795.

Statistical Results of Screening Process.—The method of using 35 mm. films of fluoroscopic images for screening out persons with pulmonary disease has been employed widely in Switzerland. Surveys were made in 1945 and 1946 in the instruction centers for newly drafted soldiers and among civilians with a total of 48,137 persons examined. Diagnostic-etiologic clarification of the observations was required in 9.1 per cent of the examined persons in 1945; acute tuberculosis was demonstrated in 0.59 per cent and open tuberculosis in 0.13 per cent. Diagnostic-etiologic clarification was required in only 6.7 per cent of the examined persons in 1946, and the incidence of active and of open tuberculosis was correspondingly lower with 0.41 per cent and 0.06 per cent respectively. The screening process has so far been used only in highly civilized countries, and the reports from the United States, Great Britain, Canada and Switzerland correspond more or less with one another and reflect to some extent economic and social conditions. Kollbrunner also made a survey of an additional 6,571 persons who had survived in the concentration camp of Belsen-Bergen. Carriers of a primary complex should be found exclusively among these survivors if it would hold true that carriers of a primary complex are less susceptible, but in contrast to expectation a surprisingly small number of calcareous foci were found among the survivors, even less than among the newly drafted Swiss soldiers.

Schweizerische medizinische Wochenschrift, Basel

76:1099-1122 (Oct. 26) 1946. **Partial Index**

*Investigations on Treatment of Exophthalmic Goiter by Means of Derivatives of Thiouracil. W. Hadorn and K. Beer.—p. 1104.
Hogben Test in Comparison with Choriongonadotropin Determination by Weight in Early and Disturbed Pregnancy. C. A. Joël.—p. 1106.
Osteomalacic Looser's Zones and Insidious Fractures in Spinal Processes of Vertebral Column. L. Belloni.—p. 1107.
Plasmocytoma of Manubrium Sterni with Local Formation Amyloid. M. Dünner.—p. 1109.
Epilepsy During Pregnancy. L. Halpern.—p. 1111.

Thiouracil Derivatives for Hyperthyroidism.—Hadorn and Beer review observations on 18 patients with toxic diffuse goiter who were treated with methyl thiouracil. In 4 of them the substance was used for the preoperative treatment. Of 4 other patients 1 did not tolerate the drug, another one interrupted the treatment on her own initiative, a third one is still receiving the drug, and in a fourth one the basal metabolism decreased from plus 35 per cent to plus 3 per cent but the tachycardia remained uninfluenced by the drug as well as by strumectomy. Of the remaining 10 patients who were treated with methyl thiouracil 6 remained well and able to work after the drug was discontinued, but 4 again showed symptoms of toxic diffuse goiter after six months, but they subsided again after use of the drug was renewed. Mild swellings of the face, as symptoms of myxedema, were observed in some patients before the basal metabolism had decreased to zero. The authors conclude that methyl thiouracil represents the best drug against hyperthyroidism, although harmless secondary effects develop in about 10 per cent of the cases.

Wiener klinische Wochenschrift, Vienna

58:661-676 (Nov. 8) 1946. **Partial Index**

Stenosis of Ureter as Result of Extensive Pelvic Endometriosis. E. Navratil.—p. 661.
*Damage to Bone Marrow Caused by Arsphenamine. V. Lachnit.—p. 666.
*Etiology of Contagious Hepatitis. O. Pendl.—p. 669.
Median Inguinal Hernia in Boy Aged 3. R. Jonas.—p. 673.

Impairment of Bone Marrow by Treatment with Arsphenamine.—Lachnit reports 2 cases of severe damage to the bone marrow as a result of arsphenamine treatment of syphilis. One patient was treated for only a comparatively short period, but all myeloid cell elements became greatly impaired. This patient died, whereas the second was cured by early resort to massive blood transfusions. The purely aplastic anemias have a more favorable prognosis than cases which also show involvement of the leukopoietic system. With regard to treatment the author stresses the importance of blood transfusion.

Etiology of Contagious Hepatitis.—Pendl experimented with duodenal juice from 131 patients in the jaundiced stage of hepatitis. Usually the duodenal juices of 7 patients were combined into 1 material. Feeding such material to young pigs resulted in microscopically demonstrable liver changes, which could be transmitted in 2 passages in the same species of animals. Contagious (epidemic) hepatitis is not regarded as identical with swine plague. Intraperitoneal inoculation of white mice with filtered duodenal juice produced hepatic changes like those in human hepatitis. The pathogenic substance passes filters that are impermeable for bacteria and it is regarded as a virus. Formations resembling virus bodies were seen in smears of duodenal juice with the aid of Giemsa's stain, in the dark field and in primulin-stained material by means of the luminescence microscope. Microscopic sections of the liver also revealed these bodies.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

90:1603-1646 (Nov. 9) 1946

*Agranulocytosis and Penicillin. L. A. Faber Jr.—p. 1605.
*Intravenous Infusion in Acute Dehydration. J. R. Borst and A. N. F. Kooy.—p. 1609.
*Stretching of Sciatic Nerve Under Anesthesia in Treatment of Acute Rheumatic Sciatica. C. A. Cammaert.—p. 1616.
Empyema of Gallbladder in Young Child. T. Boesman.—p. 1619.
Agranulocytosis After Accidental Hemorrhage. J. J. van Luin.—p. 1621

Agranulocytosis and Penicillin.—Faber reports that a man aged 61 who was treated with sulfapyridine after an operation for hernia gradually developed an absolute agranulocytosis. In spite of treatment with pentnucleotide and blood transfusion the necrotic lesions of the mucous membranes progressed. Following treatment with penicillin and with fresh liver the patient improved, granulocytes making their first appearance after six days of treatment with penicillin.

Intravenous Infusion in Dehydration.—Borst and Kooy report the histories of 2 patients in whom severe circulatory disturbances and extreme dehydration resulted from a severe gastrointestinal upset of unknown origin. Intravenous drip infusion of isotonic solution of sodium chloride with 5 per cent dextrose proved to be of great value in overcoming the dehydration and the impairment of the circulation. If the dehydration is severe, large quantities may be infused in a relatively short time.

Stretching of Sciatic Nerve in Acute Rheumatic Sciatica.—Cammaert treated patients with acute rheumatic sciatica by bending the extended leg at the hip joint into abductions up to an angle of about 100 degrees. The bending is done by gradually increasing back and forth movements. This entire manipulation of stretching the sciatic nerve requires about ten minutes and is performed under deep ether anesthesia. The patients could walk after one or two days and were able to resume their work a week or two later.

Acta Medica Scandinavica, Stockholm

126:1-96 (Oct. 15) 1946

*Trichinosis Epidemic in Borås District: Clinical and Epidemiologic Aspects. K. Wird.—p. 1.
*Employment of Serologic and Skin Tests at Outbreaks of Trichinosis in Alingsas and Borås Districts (Sweden). H. Roth.—p. 17.
Investigation of Medically Treated Gastric and Duodenal Ulcers: II. I. Qvigstad and O. Römcke.—p. 34.
*Acute Thrombocytopenic Purpura Following Rubella. J. H. Magnusson.—p. 40.
Investigations of Epinephrine Concentration in Blood: IV. Experimental Attempts to Produce Hyperepinephrinemia. M. Kobro.—p. 49.
First Discoverers of Penicillin and Its Application in Therapy. J. T. Peters.—p. 60.
Disturbance of Pigmentation in Fluorosis. L. Spira.—p. 65.
Investigations About Occurrence of Pigments that Do Not Give Diazo Reaction in Jaundiced Serums. S. Lups and F. G. D. Meyer.—p. 85.

Epidemic of Trichinosis.—Wird gives an account of an epidemic of trichinosis comprising 37 cases, none of which were fatal. The incubation period in the 7 cases in which it could be established was between fourteen and twenty-one days. Edema of the eyelids, the most characteristic early symptom, was present in all but 2 of the cases. Fever was recorded in all the cases. The blood picture showed leukocytosis with relative lymphopenia in the majority of cases, and all patients had eosinophilia varying between 6 and 72 per cent. Moderate and severe cases showed a higher degree of eosinophilia than did the mild cases. The skin test with trichina antigen gave a positive reaction in many cases but not in all. The precipitin test with living trichina larvae turned out positive in all cases. Sulfathiazole was tried but had no demonstrable effect. Some patients still had muscular discomfort from seven to eight months after onset.

Serologic and Skin Tests in Trichinosis.—Roth emphasizes that the direct demonstration of the parasites in stools, blood or muscles often fails in trichinosis. Intradermal skin and precipitin tests with an antigen prepared from dried, pulverized, extracted and filtrated larvae of Trichinella spiralis yielded good results in two outbreaks, but in some instances they failed and some false positive reactions were seen. The new microscopic precipitin test, however, with living larvae of Trichinella spiralis proved to be most sensitive and specific.

Thrombocytopenic Purpura Following Rubella.—Magnusson reports the histories of 2 girls aged 10 and 12. Both showed the ordinary clinical picture of rubella, but six and eight days after the onset both children started to bleed suddenly from the nose and mouth, and irregularly distributed ecchymoses made their appearance. The capillary resistance tests proved positive, and in both cases there was established a definite thrombocytopenia with resulting disturbance of the normal retraction of the blood clot and with prolongation of the bleeding time. The coagulation time was normal. Both patients recovered. The author discusses the conditions that give rise to this complication in rubella.

Acta Pathol. & Microbiol. Scandinav., Copenhagen

23:107-214 (No. 2) 1946. **Partial Index**

*Pathologic Anatomy of Sudden Heart Death. W. Munck.—p. 107.
Experiments on Origin of Normal F-Hemolysin in Rabbits and on Occurrence of F-Antigen in Plants. J. Forssman.—p. 145.
*Immunotherapy in Diseases Caused by Staphylococci. A. Pettersson.—p. 164.
Studies on Colibacillary Flora in Appendicitis and Peritonitis. H. W. Ewertsen and H. E. Knipschildt.—p. 170.

Pathologic Anatomy of Sudden Heart Death.—Munck analyzes observations made in the course of necropsies in 500 cases of sudden heart death. There were 411 men and 89 women. The sudden heart deaths occur in men most frequently in the age group between 40 and 60, in women at a somewhat higher age. Coronary sclerosis or its sequels was the cause of sudden heart death in 396 cases, infarction of the heart in 74 cases, rupture of the heart in 26 cases, chronic myocardial changes without simultaneous acute changes or coronary thrombosis in 142 cases, coronary thrombosis in 141 cases and syphilitic aortitis in 58 cases; in 9 cases congenital heart disease was the cause of death.

Immunotherapy in Diseases Caused by Staphylococci.—Pettersson shows that, although animals cannot be immunized with heat killed staphylococci, vaccines of staphylococci that have been detoxified by acetone and completely sterilized by formaldehyde will immunize animals against several times the lethal dose of staphylococci. This type of immunotherapy is applicable to human subjects with acne, furuncles, carbuncles and other lesions caused by staphylococci and possibly also to staphylococcic osteomyelitis.

Nordisk Medicin, Gothenburg

32:2239-2308 (Oct. 4) 1946. **Partial Index**

Nitric Acid Gas Intoxication. A. Harrestrup Andersen and J. Fosdal.—p. 2239.

Hospitalstidende

Roentgen Examinations of Patients with Brachialgia, with Special Regard to Cervical Portion of Spinal Column. G. Thomsen.—p. 2247.
Ligamental Plastic Method in Crural Herniotomy. F. Sørensen.—p. 2251.
Bacterial Antigrowth Substances. Review. K. K. Jensen and V. Schmidt.—p. 2253.

Finska Läkaresällskapets Handlingar

Tuberculous Appendicitis. L. Löfgren.—p. 2273.
Mortality from Tuberculosis in Finland During War Years. O. Wasz-Höckert.—p. 2276.
Pneumonia and Six Years of Sulfapyridine Therapy. Carl Axel Ehrenrooth.—p. 2279.

Medicinsk Revue

*Complications in Chronic Familial Hemolytic Jaundice. Sverre Aarseth.—p. 2285.

Hygiea

Operative Technic in Incontinence of Urine. A. Ingelman-Sundberg.—p. 2297.

Complications in Chronic Familial Hemolytic Jaundice.—Aarseth observed a family in which several members presented hemolytic jaundice. According to most textbooks hemolytic jaundice is often accompanied by cranial defects or other malformations in the bony system, but this does not seem to be the case in the northern countries. Three complications are noted: cholelithiasis, arthritis urica and ulcus cruris. Hemolytic jaundice should be borne in mind when there are intractable ulcers of the leg, particularly in young persons without varices.

Book Notices

Plaster of Paris Technique in the Treatment of Fractures and Other Injuries. By T. B. Quigley, Lieutenant Colonel, Medical Corps, Army of the United States. Cloth. Price, $3.50. Pp. 107, with 103 illustrations. Macmillan Company, 60 5th Ave., New York 11, 1945.

This manual is designed to help the surgeon and his assistants acquire skill in applying plaster of paris casts in the treatment of traumatic conditions. Good technic is important if satisfactory results are to be obtained and serious complications avoided. The experience of war has emphasized the value of immobilization in the treatment of numerous types of injury. It is imperative that all concerned learn the correct technic for procedures in common usage. Of all methods of immobilization, the plaster of paris "cast" is, in general, unsurpassed for efficiency. It is cheap, durable and easily adapted to the individual case.

This book presents, by means of text and illustrations, proper technics for various types of casts useful to the practitioner. It discusses the types of material available and their preparation, preapplication fixation and padding, care of the patient while the cast is in place, and removal of casts in clean and in septic cases. It emphasizes the importance of constant watchfulness for signs and symptoms of complications resulting from tissue ischemia. Machine made bandages, although somewhat more expensive, are preferable. Fixation is easily achieved on any of the standard fracture or orthopedic tables but can be accomplished with little more special equipment that is found in the average household plus a moderate amount of ingenuity. The ideal cast has no other padding than stockinet, but it must be fashioned with the greatest care in molding over bony prominences, avoiding even the smallest folds, wrinkles and dents. "When in doubt, pad!" A pressure ulcer over a bony prominence can easily produce deformity and disability lasting much longer than the original injury for which the cast was applied. Adhesive tape should never be applied to the skin under a plaster cast. Some degree of infection is sure to occur in time, and some of the patients are more or less allergic to adhesive tape.

No circular bandage other than sheet wadding should be used under plaster of paris. Plaster bandages should not be "wrung out," but should be used "sloppy wet." Plaster bandages are laid and not pulled into place. Porosity of plaster of paris is one of its most valuable qualifications, and sealing with paint may result in maceration of the underlying skin. A number of serious complications can occur in a relatively brief period, all of which are the result of tissue ischemia. It is essential that every person concerned with the care of a plaster cast after its application be keenly aware of the danger signals. The symptoms are pain and numbness, and the signs are cyanosis, anesthesia and edema. Undiminished pain four hours after recovery from anesthesia should be regarded with grave suspicion. If it continues unabated for six hours, active measures for investigation and relief must immediately be instituted. Localized pain usually over bony prominences must always be investigated. "The patient is always right."

Ulcers can develop rapidly, especially in the aged and malnourished, and become painless in a few hours after the sensory nerve endings have been destroyed, only to be revealed later when the cast is removed. The first indication of ischemia or of pressure on a peripheral nerve may be tingling followed by numbness in the limb. The color of the extremity at the distal end of the cast should be the same as that of the uninjured limb when placed in the same position. It is therefore important that the sensation of the parts left uncovered by plaster (usually the fingers and toes) be carefully checked at frequent intervals during the first twenty-four hours after the application of the cast, especially if other signs or symptoms appear. To avoid complications, some surgeons, as a routine, split casts immediately after application. This is unnecessary and illogical. If any signs or symptoms appear, the surgeon who applied the cast should be informed at once.

Dr. William Darrach, who wrote a foreword to the book, says "Rarely have I seen so much horse sense and useful information tucked into such compact form."

The Personality of the Preschool Child: The Child's Search for His Self. By Werner Wolff, Professor of Psychology, Bard College, Annandale-on-Hudson, N. Y. Cloth. Price, $5. Pp. 341, with 118 illustrations. Grune & Stratton, 381 4th Ave., New York 16, 1946.

In 1943 Dr. Wolff published "The Expression of Personality: Experimental Depth Psychology," a book devoted to a study of the verbal, written and artistic productions of individuals as significant indexes of their motivations, symbolisms and personality. In the present volume Dr. Wolff applies his research methods to the preschool child, whom he proposes to evaluate by criteria that are intrinsically different from those applicable to the adult. In the first four chapters the author presents a brilliant and penetrating analysis of the intellectual, emotional and social growth of the child. He correctly points out that the usual tests for "average intelligence" are highly unreliable during the first three years of life, since the personality of the tester, the variability of circumstance and the highly labile sensitivities and emotional reactions of the child may prevent him from expressing his latent perceptive, integrative and esthetic talents. To measure these Dr. Wolff proposes a "rhythmic index" based on a geometric analysis of the child's drawings or other activities and designed to detect a sense of fitness and proportion. The author reaches two main conclusions: (1) that "it is almost as if the child and the adult live in two different planets" nearly devoid of intercommunication, and (2) that all of the child's activities revolve about a somewhat mystic "search for his self." To the specialist in this field some of Dr. Wolff's experiments and formulations will prove interesting and stimulating, although the experienced psychoanalyst will disagree with the author's insistent distinctions between the "depth psychology" of infant and adult. Both lay and professional readers, however, may find portions of the text obscure, the style dogmatic and repetitious, and the conclusions in some instances not discernibly supported by the data cited. Despite these recurrent defects, the work illuminates the imaginative and emotional universe of the preschool child and therefore merits a place in the library of the pediatrician, the child psychologist and the psychiatrist.

The Nature and Conditions of Learning. By Howard L. Kingsley, Professor of Educational Psychology, Boston University, Boston. Cloth. Price, $6. Pp. 579, with 30 illustrations. Prentice-Hall, Inc., 70 Fifth Ave., New York 11, 1946.

This is a comprehensive textbook, written primarily for students of educational psychology. Learning is considered the "core of educational psychology." Laboratory studies are deemed the basic source of understanding of learning, and educational psychology must rely on such studies; classroom studies on learning are supplemental. The five major sections of the book consider the fundamental nature of learning, fundamental principles of learning, improvement, the learning curve and physical handicaps to learning, forms of learning and retention and transfer of learning. The author intentionally omits discussion of neurologic theories of learning and only most briefly outlines organic or bodily bases of learning, since he feels that the understanding of these is not the immediate concern of the teacher. Maturation, trial and error, repetition, motivation, conditioning and the principle of relationship and organization are the six fundamental principles of learning discussed. This is a carefully and clearly written book in which the author has diligently selected what he considers most significant in the laboratory studies on learning. It is no dry account, however, in which the laboratory is divorced from the living human being. The clinician who learns about learning primarily from human beings outside of laboratories will feel that discussions of development of emotional activity and of attitudes and ideals are thin; descriptive yet inadequate. An adequate consideration would involve consideration of mental processes and human relationships not readily amenable to study in laboratories. The tremendous gap that once existed between the so-called academic psychology of the classroom and laboratory and the apparently less scientific dynamic psychology of the clinical student of human behavior is rapidly narrowing. It seems that before long language will be found in which common denominators of the concepts formulated by the analytical clinician and by the educational psychologist can be stated.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

ANTICOAGULANTS AND CORONARY THROMBOSIS

To the Editor:—Has heparin been used in the treatment of coronary thrombosis? How effective is the treatment? What is the procedure?

M.D., New York.

ANSWER.—Anticoagulants, in particular heparin and Dicumarol (3-3'-methylene-bis-[hydroxycoumarin]) have been used with the aim of preventing coronary thrombosis in coronary heart disease and in the treatment of acute coronary thrombosis with a view of preventing the spread of the thrombosis itself and the deposition of intracardiac thrombi, which can be a serious hazard in myocardial infarction as the result of the dispersion of peripheral emboli to the brain or elsewhere. There has been to date a varied but quite inadequate experience with such therapy, which should be considered as still in the experimental stage. As a matter of fact, a research has been begun to last a year or more, organized by Dr. Irving Wright, to be carried out in various parts of the country, to test the value of the use of Dicumarol in acute coronary thrombosis. It will be some time before properly controlled studies will have been completed. Before such a study has been completed, much caution should be exercised. Administration of the anticoagulants must be carefully followed daily to observe both the course of the disease itself and of the Dicumarol administration, with frequent testing of the prothrombin time and a quick use of antidote if difficulties should arise. Theoretically one may argue in favor of such therapy, and practically it may prove to be worth while; but in our present state of knowledge a decision cannot yet be made.

REPAIR OF HYPOSPADIAS

To the Editor:—Please discuss the use of a whole skin graft as a tube over an indwelling catheter for the formation of a urethra in cases of hypospadias. What liquid adhesive material is employed to make the skin graft stick to the indwelling catheter and thus avoid the use of sutures?

M.D., Canada.

ANSWER.—The use of a full thickness skin graft to repair the uretha in hypospadias has been employed with excellent results by Humby. The skin was taken from a hairless surface, preferably the inner side of the upper part of the arm, and glued to a catheter with benzol mastiche. The lower surface of the penis was then incised, the skin undermined and the septum between the corpora cavernosa split to half its depth. The graft with the catheter was then placed in position, the graft anastomosed to the urethra with fine silkworm gut sutures (which were later seen to pass via the urethra) and the overlying tissues and skin were sutured in place over the graft.

The technic is described in detail by Graham Humby in the *British Journal of Surgery* **29**:84 [July] 1941.

EFFECTS OF SULFONAMIDES ON FETUS

To the Editor:—Does sulfadiazine 1 Gm. four times a day for four to five days have any undesirable effects on the embryo in the first weeks of pregnancy?

Alvin C. Poweleit, M.D., Louisville, Ky.

ANSWER.—One case is recorded in which anemia in an infant was observed at birth after the mother had been treated with sulfanilamide in the eighth month of pregnancy. There was, however, little evidence to associate the anemia with the sulfonamide therapy. There was no evidence of fetal abnormality in 14 other similarly treated mothers. As far as the literature is concerned, then, there are no other instances in which there has been possible toxicity to the fetus. It is the general opinion that pregnancy should not be a contraindication to the administration of sulfonamides in full dosage when the mother has an illness that may be influenced favorably by sulfonamides. It might be unwise to give sulfadiazine for long periods either in small or in large doses. It is well known that the blood levels of the fetus and the mother rapidly reach equilibrium at the same level.

TOXOPLASMOSIS

To the Editor:—If a mother who has given birth to a child with toxoplasmosis (congenital type) becomes pregnant again, will she be likely to give birth to child with a similar condition?

Alvin C. Poweleit, M.D., Louisville, Ky.

ANSWER.—Toxoplasmic infection in infants and children has been reviewed by Sabin and has been discussed by several other students of the disease. In 15 cases reported, instances of toxoplasmosis have not occurred in siblings, and several infants were normal who were born previous or subsequent to the infant with toxoplasmosis. In other words, in the few cases that have been reported definite evidence is lacking that congenital toxoplasmosis will occur in repeated pregnancies. On the basis of the few cases that have been studied, it can be said that if a mother gives birth to a child with toxoplasmosis she may give birth to a perfectly normal infant in subsequent pregnancies.

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ROUTINE VITAMIN K BEFORE DELIVERY

To the Editor:—For some years we have routinely administered Hykinone to all patients before delivery in order to diminish or prevent blood dyscrasias in newborn infants from low blood prothrombin levels. Is this medication of value? Patients are subjected to the inconvenience of hypodermic injections; the medication is expensive and nursing technic is complicated. Would it be wise to discontinue this routine practice? Maternity cases at this hospital average 2,500 a year.

Owen Jones Toland, M.D., Philadelphia.

ANSWER.—Estimates of the frequency of hemorrhagic disease of the newborn range from 0.1 to 0.7 per cent. It is not likely that every case is characterized by hypoprothrombinemia or likely to respond to administration of vitamin K. From this it would appear that more than two hundred times as many injections are being given as would be necessary if some test for K deficiency was used to identify the mothers who need the material. A critical study of the hospital records should be made in order to determine how many cases occurred before this routine was instituted and to estimate how many cases have been prevented since that time.

There is, of course, good reason to expect that K deficiency in the infant can be prevented by administering the vitamin ante partum to the mother, and water soluble preparations (of which Hykinone is one) are available to supplement the solutions in oil. But there are general objections to the indiscriminate parenteral administration of medicaments of any sort.

ALTERATION OF INTESTINAL FLORA

To the Editor:—What is the correct procedure to change the flora of the intestinal tract? Is the administration of 100 billion Lactobacillus acidophilus organisms daily and 100 Gm. of lactose or dextrin daily proper therapy?

M.D., Illinois.

ANSWER.—The plan of therapy outlined in the query should alter the intestinal flora. The coliform flora, normally containing a predominence of Escherichia coli, Streptococcus fecalis, L. acidophilus and Clostridium welchi, can be altered to one in which L. acidophilus and the closely related Lactobacillus bifidus grow to the exclusion of almost all other types of bacteria. The change can be accomplished by feeding very large amounts of lactose or dextrin and/or by feeding 100 billion L. acidophilus organisms daily. Rettger recommends drinking 1 quart (liter) of high quality acidophilus milk daily and a general diet with small amounts of meat and liberal amounts of foodstuffs, vegetables and milk. The Council on Pharmacy and Chemistry (New and Nonofficial Remedies 1934, p. 250) has stated that acidophilus milk should contain not less than 200 million viable bacilli per cubic centimeter on the day of manufacture and not less than 100 million per cubic centimeter on the expiration date. However, use of milks containing 400 to 500 million viable bacilli per cubic centimeter at time of delivery is recommended by Rettger. The acidophilus milk therapy should be applied faithfully over long periods (eight to twelve weeks and longer in some instances) and possibly repeated after a "rest period" of four to six weeks. The dietary phase of therapy should be adhered to continuously even after the bacterial therapy has ceased. It is best that alcohol be interdicted.

The therapeutic value of such alterations in the intestinal flora is highly questionable.

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PSYCHIATRIC SENSE AND NONSENSE

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Hartford, Conn.

These past years, especially the war years, have been significant in bringing psychiatric facts and fancies to the fore. After a century of ostracism, psychiatry has found itself accepted almost over night in the home, in industry, in the schools and in the community. Actually, it has come to be quite the fashion to have a psychoneurosis!

In spite of this sudden rise to fame and fortune, psychiatrists might do well to examine themselves carefully to make sure that they are headed in the right direction. As chairman of the Committee on Public Education of the American Psychiatric Association and as president and psychiatrist in chief of a psychiatric hospital, I constantly receive communications expressing views on psychiatric matters from individuals and groups in my own country and abroad. These spontaneous remarks encompass most of the prevailing views on psychiatric developments, from which one can hazard a fairly good forecast of probable things to come.

There are many favorable indications that great progress has been made, but I am also convinced that, in spite of surface indications, psychiatry is not necessarily assured of smooth going from now on. Rather, there are matters not entirely desirable which call for serious, immediate attention.

Paradoxically enough, the matters which are not entirely desirable may be related to the popularity which has come to psychiatry so suddenly and unexpectedly. There is real danger in letting this sudden rise to fame and fortune "go to one's head"!

Psychiatry was born out of the jails and almshouses and probably had a more ignoble birth than the other branches of medicine. Subsequently, the struggle to establish psychiatry as a scientific practice related to the rest of medicine has met with more obstacles than has that of the more prosaic, less dramatic specialties such as cardiology, pediatrics or dermatology. In the not too distant past the psychiatric institution was separated from the life of the community. The psychiatrist was little more than a keeper of the keys who, if he did emerge from his walled abode, was looked on as some one who spoke a language different from others and spoke of things unrelated to society outside of the asylum.

Yet in the face of public rebuffs and an almost complete lack of monetary support, a relatively small group of psychiatrists and other earnest people have worked untiringly to learn more about mental illnesses. They have struggled to provide better care for psychiatric patients and to place psychiatry on a scientific medical basis.

It has been a hard struggle and a long one. Now, with the spotlight on psychiatry, the temptation is great to rush to the center of the stage; and this is the time that psychiatrists must avoid overplaying their part and, incidentally, suffering the consequences.

I am sure that all will concur when I say that it is psychiatric nonsense to claim that present day psychiatry contains the cure for all the mental ills to which the human flesh is heir. It is psychiatric nonsense to claim that if psychiatry only had a chance a vast majority of psychiatric breakdowns could be prevented.

In answer to the sudden and flattering demands on psychiatric services, one might better become increasingly realistic and answer the question: "What is actually known of preventive psychiatry in the sense that the rest of the members of the medical profession, as well as the laity, use the term preventive medicine?" Largely through preventive medicine, the span of life in America has been lengthened 20 years within a single generation. What does psychiatry have to offer today that is at all comparable to that?

It is true that the psychiatrist has many impressions about what is good for the mental health of the human being. It is true that he entertains many hunches about what will alleviate psychiatric illnesses, which comprise the greatest of all public health problems. However, it is also true that, with comparatively few exceptions, he does not know the cause of so-called mental diseases. Most diagnostic terms are only descriptive of conditions and do not yet represent disease entities in the same sense that pneumonia, typhoid fever and similar diagnostic terms represent disease entities.

For example, what is manic-depressive psychosis? What is its cause and how can it be prevented? What is dementia precox? What is its cause and how can it be prevented? I doubt if the endless papers describing these conditions are getting at the fine point of establishing disease entities, and the establishment of disease entities must antedate any truly scientific exploration into the causes and prevention of mental diseases.

It is only during the past fifty years that the great scientific discoveries have been made in psychiatry, and all in all science is a plodding, painstaking process which must be accepted if psychiatry is to be established on an enduring basis.

There is the matter of the forms of treatment. Therapeutically, psychiatry has made great advances since I first entered the field thirty-eight years ago. I have seen fads of all kinds come and go. I have

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Read at the Primer Congreso Medico Social Panamericano at Havana, Cuba, Dec. 6, 1946

From the Institute of Living, the Neuropsychiatric Institute of the Hartford Retreat (president and psychiatrist in chief).

seen the intestines removed and thrown away. I have lived through this era and that era of enthusiasm about one form of therapy or another form of therapy, and I have seen them discarded.

Consider the present day shock therapy. Only a stupid person would decry shock therapy as an instrument in helping the mentally ill, but nevertheless one should not condone the use of shock therapy for everything from an ingrowing toenail to baldness. The seemingly miraculous results obtained in the presence of shock therapy should not cause one to lose the wits with which one was born or the knowledge one has acquired in the past thirty or forty years. To proceed as if shock therapy, any more than any other psychiatric technic, can usurp the place of all other therapies is psychiatric nonsense.

Also, lobotomies or leukotomies are coming forward. Because of their grave danger and high demands on the resources at the command of the psychiatrist, they probably are destined never to be a runaway; but again, to assume that the surgical procedure of the lobotomy replaces the usefulness of all other therapeutic technics and amassed psychiatric knowledge would be psychiatric nonsense.

Psychiatrists talk at great length about psychotherapy, which may convey a great deal to their own initiated group, but in the minds of the general public the term is more or less mixed up with metaphysics and the occult.

It is my own personal belief that psychotherapy, regardless of the form it assumes (and it does assume many forms), is essentially personal tutoring. Further, I believe that sound physical medicine and psychotherapy in the form of personal tutoring occupy the front ranks in the help which may be offered to the mentally ill. Other therapies are important adjuncts, but psychotherapy, in the form of personal tutoring, and sound physical medicine are a reliable basis for all present day psychiatric treatment aimed at restoring psychiatric patients to society.

A patient can be taken into a psychiatric institution and his psychiatric disorder can be alleviated by protecting him from the sin and suffering in the outside world and applying any one or several of other psychiatric treatments. But unless that patient is better equipped, when he leaves the institution, to cope with his problems outside the institution, treatment has been a failure. Nine times in ten the factors in his breakdown were concerned with his inability to cope with life as it exists outside the institution, and the defects within persons which make them unable to cope with life are as varied as human nature itself.

If a patient is ever to fulfil his destiny as a member of society, he must be trained to develop and to use his mental and physical resources in the world as it exists outside the mental hospital. If he is able merely to adapt himself to life inside the mental hospital, treatment has been unsuccessful. Psychiatric patients must be examined from the point of view of the human mind and the human body and must be put in the best possible condition to meet life. In a word—they must be reeducated for living.

In past years the psychiatrist has expended great kindness on the patients in mental hospitals, but let past procedures be examined to see if, with all this kindness, he has not expended all too little intelligence.

I urge a period of self analysis to see if the procedures used have not in a large measure been a desocializing influence, tending to train patients away from the methods and practices of society outside of institutions.

For example, how many patients have been making baskets, weaving rugs and polishing the floors in the hospital? How many of those same patients will make baskets, weave rugs or polish floors in their communities if the psychiatrist succeeds in sending them home?

To the extent that patients are exposed to any procedures foreign to their lives outside of the hospital, one may be guilty of doubtful practice. Indeed, in some instances it might well be asked if one is not unconsciously institutionalizing the patients; and institutionalizing the patients is extremely easy, even while one is all kindly feelings and charitable intent. But is this good treatment?

Psychotherapy in the form of personal tutoring is education in its broadest sense and has evolved in the United States into a technic known as reeducational therapy, with decidedly practical applications to normal living.

Of what does this reeducation consist? To answer that question, I am going to consider man's psychologic life under four practical headings: (1) his vocational life; (2) his avocational life; (3) his social and recreational life, and (4) his physical self.

Vocation.—First of all, man has a need to be of some use to others. He has a psychologic need to feel reasonably justified for taking up space on the good earth. The housewife who keeps a good home, the secretary who serves her employer, the truck driver, the electrician, the doctor—each is fulfilling a useful and responsible place in society. This is the vocational aspect of life.

Avocation.—The concept of avocations is that they are "secondary vocations." Most persons are not fortunate enough to do for a living that at which they would like to play, so they must have avocations or hobbies to satisfy their urge to be usefully interested in life. Avocations are those things which man does by himself as a hobby.

Social and Recreational.—Third, man is a social animal with a need to play and enjoy the lighter side of life. He needs to do things with other people. He needs their company and he needs to know how to get along with them.

Physical.—Of course, man must be physically well and physically fit. He must have good habits of taking care of the human body, which is the vehicle of his mind. It has often been said that a healthy body is necessary for a healthy mind.

To recapitulate, a human being sits psychologically on a four-legged chair. One leg of that chair is his vocation; another leg is his avocation; the third leg of that chair is the social and recreational leg, and the fourth is his physical self. If his chair has four solid legs, he is destined to sit comfortably and securely throughout life. If one leg is too short, or missing, he may well find a reasonable amount of security in his particular chair of life. If two of the legs are defective, he will probably be uncomfortable; and some people seem to have all four legs of different lengths, or some entirely absent, which leaves them precariously balanced, with the result that they fall.

For the moment I shall put aside theoretic thinking in the field of psychiatry, dispense with wishful thinking and get down to the known facts. Let psychiatrists make sure that these facts are used as the basis for the things which are still in doubt.

I have already intimated that one must first learn the physical condition of every psychiatric patient. At the Institute of Living in Hartford, Conn., with which I have the honor to be associated, more than a thousand new patients were received in the past year. As a routine, every patient has a complete physical examination, roentgenograms of the head, the chest, the heart and the lungs. Every patient has an extensive examination of the eye, the ear, the nose and the throat, the blood and the body fluids, electroencephalograms, electrocardiograms and all the neurologic and other physiologic examinations and tests. To the extent of present day diagnostic methods, no effort is spared to determine the physical condition of the patient at the time he is received, regardless of what the so-called psychiatric diagnosis may be. In addition, every patient is routinely exposed to a battery of psychologic tests.

It is interesting to note that two thirds of all the patients admitted have some demonstrable physical irregularity. At times the connection between the physical irregularity and the mental condition is quite obvious, but in a large percentage of the cases the connection is a matter of present and future research.

It is interesting to note that among 1,000 cases, thorough examinations indicated 8 brain tumors, which diagnoses were confirmed on the operating table. The psychiatric diagnoses of these patients had been psychoneurosis, dementia precox, reactive depressions and manic-depressive psychosis.

The accumulation of thousands of careful physical examinations on thousands of mental patients provides a fruitful field for research in the future, but I shall resist the temptation to guess what these studies may reveal as to the causes of mental diseases and their possible treatment. I am sure that these studies of the human body and the human mind will eventually result in the cessation of talk about mental disease and physical disease as two separate things but will lead to the inclusion of both under the term, disease. During the thirty-eight years I have been in the field of psychiatry, I have come to the conclusion that there is no such thing as "mental" disease in the sense in which the term has been used for several generations.

If one has a carbuncle on the back of the neck, one will refer to it as a physical disease, but is one's psychologic side changed? Of course it is. Is the personality of the dyspeptic changed? Of course. The change is so well known that the distorted personality of the dyspeptic is a common subject in the funny papers. Is the personality of a patient with typhoid changed in the midst of his delirium? Of course it is. The most psychotic patient I have ever seen was in the delirium of typhoid fever.

When I entered the field of psychiatry, dementia paralytica or softening of the brain was accepted as a "mental" disease. Then I had the pleasure of looking at the original slides in which the spirochete of syphilis was discovered in the cortex of the brain of a patient with dementia paralytica, revealing that this entity is syphilis of the brain. Is that a mental disease, or is it a physical disease?

There is a large group of patients with involutional melancholia. It is now known that in involutional melancholia there is an endocrine imbalance, the correction of which is the most immediate feature in the cure. Is involutional melancholia a mental disease or a physical disease?

I have seen dementia precox occurring in patients with pellagra. With the cure of pellagra, the dementia precox disappeared. Was that a mental disease or a physical disease? I have seen dementia precox in army patients who had long had malaria. With the cure of the malaria, the dementia precox disappeared. Was that a mental disease, or was it a physical disease?

Think of man as a whole. Think of his physical and mental incapacities as diseases, not separately as physical diseases or mental diseases. I fully believe that any other type of thinking will be referred to in the future as pure psychiatric nonsense.

However, there is a long gap between present day knowledge and the knowledge of a decade hence. Within that period, there are patients to be treated.

I doubt if merely talking with a patient, using so-called psychotherapy regarding hidden experiences which occurred to him at 2 or 3 years of age, is a practical solution to the problems of the hundreds of thousands of psychiatric patients. More is known about the course of the so-called mental diseases than about their causes. Happily, more is known about what can be done for so-called mental disease than about the exact nature of the disease.

A person may be born with a curved spine or weak eyes. Physicians can examine his spine and do a great deal to strengthen it. What is more, that person can be taught to live a useful and successful life with that handicap. By study of a patient with weak eyes, the defect can sometimes be corrected with glasses and that person can be taught to be a useful member of society. It is also true that one can study psychiatric patients as to their vocational past and their vocational possibilities and train them along vocational lines, so that they can live successfully in line with their vocational capacities and limitations. One can study their avocational past and their avocational possibilities and help them to develop these potentialities. One can study their social and recreational past and train them along these lines to enable them to live successfully according to their capabilities in a social and recreational way. And one can certainly study their physical selves and aid in their development so that they can live according to their physical capabilities. These things can be done; if one does them, it makes psychiatric sense and not psychiatric nonsense.

If psychiatrists will aid in the development of their patients vocationally and avocationally, socially, recreationally and physically, theirs will be a practical approach to the cure of psychiatric disabilities. If that is used as a basis for the attack on psychiatric diseases, one may have a clear conscience if one wishes to add any of the purely theoretic approaches. On the other hand, the psychiatrist is failing in his responsibility if he neglects proven facts and follows exclusively any of those schools of psychiatric thought which are based primarily on hypotheses.

There is no such thing as a scientific psychiatric approach which does not have a solid demonstrable fact as its point of departure. Theories and hypotheses are stimuli for research, but theories and hypotheses based on other theories and other hypotheses are not scientific facts. If the psychiatrist is lost in a morass of theory, there is great danger that his ideas of scientific advances will drift into the sphere of wishful thinking and fairy tales. A psychiatrist must first of all be a good physician with a complete knowledge of the human body and must use his knowledge in treating his patients. Second, he must be a bit of a sociologist who is a constant student of the milieu in which his patient has lived and must live in the future. Third, he must be a psychologist who understands the workings of the human mind. Fourth, he must be a specialized type of educator and fifth, he must be a vocational guidance expert. Any psychiatrist who does not fulfil all five of these intellectual disciplines is destined to fall short of his possibilities.

Most important of all, the psychiatrist must express himself in terms which can be understood by every medical practitioner, and psychiatry must be made an integral part of medicine. It does not take a great mind to make simple things complicated, but it takes a very great mind to make complicated things simple. Let psychiatrists, then, distinguish between psychiatric sense and psychiatric nonsense and bring simple, hard-headed sense into this field, which contains the greatest public health problem in the world today.

RHEUMATIC FEVER

Its Recognition and Treatment

GEORGE C. GRIFFITH, M.D.
Pasadena, Calif.

The importance of rheumatic fever is indicated by the fact that 2 per cent of the school children of the United States have heart disease as a result of the rheumatic state; that the cause of 98 per cent of all heart disease in patients under 20 years of age is rheumatic fever; that rheumatic fever causes more deaths in the first two decades of life than all of the communicable diseases plus pneumonia; that rheumatic fever causes annually ten times as many deaths as infantile paralysis, and that a study of the young men rejected for military service because of heart disease showed the rheumatic state to be the etiologic factor in 51 per cent in Boston, 70.3 per cent in Chicago, 64.4 per cent in New York, 65.9 per cent in Philadelphia and 39.6 per cent in San Francisco (White, Levy and Stroud [1]). Its importance is further emphasized by the recent knowledge that rheumatic fever is not a disease confined to the temperate zone but is almost as prevalent in subtropical climates as in the temperate zones (Sampson [2]) and that even the acute fulminating type of the disease is frequently seen in the tropics (Huntington [3]). The belief that the disease is confined to the temperate zone arises from the more frequent occurrence of the severe types in that zone. This important disease has now become a global problem.

Hereditary susceptibility to the disease, previously thought to be of a mendelian recessive character (Armstrong and Wheatley [4]) may be largely due to poor nutrition or to group crowding, as shown by the experience of the Army and Navy in training centers. Good nutrition and segregation may be a large factor in protecting the individual from an inciting agent such as the beta hemolytic streptococcus (Wilson [5]). It is true that children of parents who have had rheumatic fever are more susceptible to the development of the disease in the presence of an infection due to hemolytic streptococcus, i. e. tonsillitis, scarlet fever and otitis media, than are the children of nonrheumatic parents (Paul [6]).

DEFINITION

From the combined experience of the clinician, pathologist, bacteriologist, allergist, neuropsychiatrist and dermatologist working with this disease in a large group of patients of military age, a consensus has gradually developed that this disease entity is best characterized by the following definition: Rheumatic fever is a systemic poststreptococcic nonsuppurative inflammatory disease with protean manifestations of varying severity and duration. Pathologic, histologic and clinical observation shows that the disease is a hypersensitivity angiitis manifest in all of the bodily structures from the skin to the smallest subdivision of the viscera.

THE PHASES OF THE RHEUMATIC STATE

The first phase of the disease is that period of illness during which the patient is the host to the beta type of the hemolytic streptococcus. From military experience it has been learned that 5 per cent of trainees develop a suppurative hemolytic streptococcic infection in the upper portion of the respiratory tract. This infection may take the form of a pharyngitis, tonsillitis, otitis media or a sore throat with scarlatiniform rash, the so-called scarlet fever. In approximately 5 per cent of this group of patients the symptoms and signs of rheumatic fever develop. Therefore it is logical to consider every patient with a throat infection due to hemolytic streptococci, a potential rheumatic fever subject. In those susceptible persons in whom rheumatic fever develops it is proper to consider this the first phase of the disease.

The second phase is the period of latency which is from one to four weeks in duration. It is during this, the second phase of the disease, that the patient develops a hypersensitivity, is found to tire easily, may run a mild fever and have a persistent leukocytosis, elevated blood sedimentation rate and a gradual increase in the level of the antistreptolysin titer (Rantz [7]). This second phase is frequently observed only as an interval of time. The painstaking physician will find that the patient is not symptom free and is developing the rheumatic state.

The third phase is the well known period of rheumatic fever activity. The protean manifestations may be grouped into four distinct types, each of which with its symptom complex will be described in detail subsequently. The severity and duration of this phase of activity cannot be predicted, as the most fulminating onset may be followed by a relatively short period of activity, for example, from four to six months, while in the subclinical type activity may persist for years.

The fourth phase is the period of rheumatic fever inactivity. It is the period of the arrested rheumatic state, or the period of rheumatic quiescence. This phase of the disease may be long or short, depending

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Read in the General Scientific Meetings at the Ninety-Fifth Annual Session of the Americ San Francisco, July 2, 1946.

[1] Levy, R. L.; St P. D.: Report of Re-Examination of 4,994 Men Military Service Because of Diagnosis of Cardiovascular Defects, J. A. M. A. **123**: 937 (Dec. 11) 1943.

[2] Sampson, J. J.; Hahman, P. T.; Halverson, W. L., and Shearer, M. C.: Am. Heart J. **29**: 178 (Feb.) 1945.

[3] Huntington, R. W., Jr.: Personal communication to the author.

[4] Armstrong, D. B., and Wheatley, G. M.: New York State J. Med. **45**: 169 (Jan. 15) 1945.

[5] Wilson, M. G.: Rheumatic Fever, New York, Commonwealth Fund, 1940.

[6] Paul, J. R., and others: The Epidemiology of Rheumatic Fever, New York, Metropolitan Life Insurance Company, 1943.

[7] Rantz, L. A.; Boisvert, P. J., and Spink, W. W.: Etiology and Pathogenesis of Rheumatic Fever, Arch. Int. Med. **76**: 131 (Sept.) 1945.

on reactivation of the rheumatic state. The mild pain occasioned by muscle jelling, articular stiffness and soreness resulting from fatigue or exposure do not constitute a reactivation of the rheumatic process. An infection of the upper respiratory tract followed by fever, tachycardia, malaise, dyspnea and migrating polyarthritis and concomitant laboratory observations of an increased blood sedimentation rate, leukocytosis and electrocardiographic changes constitute a reactivation. Of a large number of patients returned to a rheumatic fever unit for supposed reactivation, only 2.4 per cent were found to have a reactivation. Thus, the fourth phase of the disease begins with the termination of rheumatic fever activity and ends only if reactivation occurs.

ONSET OF THE RHEUMATIC STATE

The beginning of the active stage of rheumatic fever may be insidious and go unnoticed and undiagnosed for a long time, as shown by the survey of rejectees with cardiovascular disease (Levy, Stroud and White[1]). It was found that 71.2 per cent of patients in four cities and 50 per cent in two cities did not give a history of acute rheumatic fever. On the other hand, the onset of the rheumatic state may be severe. The younger the patient the more severe the onset appears to be the rule. The latency phase of the disease is ended by an acute illness characterized by migrating polyarthritis, fever, shortness of breath, tachycardia out of proportion to the rise in temperature, loss of appetite and severe sweats. The patient is restless but moves the extremities little because of painful joints. The face is flushed. The tongue and lips are dry. The skin is hot and dry, alternating with periods of drenching sweat. The migrating polyarthritis usually begins in the larger joints, such as the knees, ankles, elbows, wrists and at times the hip and shoulder joints. The periarticular tissues are swollen, hot and tender. As the process begins to subside in one joint, it often lights on a contralateral joint. The polyarthritis persists a relatively short time after the patient has been put to rest. The administration of salicylates sufficient to raise the blood level to 30 mg. per hundred cubic centimeters of blood relieves the polyarthritis promptly. Patients with sedentary duties do not develop the severe articular manifestations which characterize the physically active group.

The fever may be absent, moderate or severe. The severely elevated temperature persists for ten to eighteen days and then gradually subsides, or it may continue at a low level for months. The shortness of breath is usually overlooked. It is common in the acute stage and is the first sign of myocardial failure and/or rheumatic pneumonitis. The tachycardia is out of proportion to the degree of fever. Even though fever is absent, a tachycardia is usually present. The tachycardia persists as long as there is activity present.

During the acute onset, carditis is shown by dilatation and gallop rhythm; electrocardiographic changes may be present. Pericarditis as indicated by a to and fro friction rub or by an effusion is not frequently diagnosed. In a large series of patients it was diagnosed clinically in 2.82 per cent of cases. Endocarditis is diagnosed only with caution in the active phase when (1) the murmur is diastolic in time; (2) a systolic murmur persists through six months' observation; (3) the systolic murmur remains the same or grows worse in intensity and is heard in all positions and in all phases of respiration; (4) the systolic murmur is transmitted. These signs of carditis may be present early in the acute onset but most frequently are later manifestations.

Pneumonitis was found in 11.3 per cent[7a] of 1,046 patients with prolonged rheumatic fever. The symptoms of rheumatic pneumonitis in the order of their frequency are shortness of breath, tachycardia, fever, pleuritic pain, malaise and cough. The shortness of breath and tachycardia may precede the fever, pleurisy and cough by many hours to a few days. Physical observation shows small areas of dulness and diminished breath sounds anywhere in the pulmonary fields. Fine rales soon appear. The patchy areas of pneumonitis shift from one site to another. The upper lobes of the lungs are involved as frequently as are the lower lobes. A pleural effusion may appear rapidly. It disappears with equal rapidity unless congestive failure supervenes. Thoracentesis, like pericardial drainage, is seldom necessary. The roentgenologic observations of rheumatic pneumonitis are those of so-called primary atypical pneumonia. The pathologic histology is that of a pulmonary angiitis with multiple small infarctions.

Loss of weight and loss of appetite are common at the onset. The return of appetite and a gain in weight are good indexes that the rheumatic activity is subsiding.

Abdominal pain is due to localized peritoneal inflammation resulting from the angiitis in the parietal and visceral peritoneum. Confusion with acute appendicitis is not frequent. More frequent is its association with liver engorgement. In the acute onset of rheumatic fever abdominal pain is frequently due to diaphragmatic pleurisy or to peritoneal irritation. Usually the dyspnea, tachycardia, signs of pneumonitis or carditis and polyarthritis are out of proportion to the abdominal pain. If the abdominal pain localizes and the classic picture of acute appendicitis persists, then surgical intervention should be undertaken. The problem of acute appendicitis at the onset of acute rheumatic fever was not frequently encountered. Acute appendicitis during the prolonged period of convalescence did not exceed the expectancy in a similar age group of nonrheumatic fever patients.

Chorea at the onset of acute rheumatic fever is extremely infrequent in patients of military age. In only 0.04 per cent of rheumatic fever patients did chorea develop at any time during the period of observation.

At the onset of the disease erythemas are frequent. The erythemas are those of a hypersensitivity, varying from erythema marginatum to urticaria. Erythema multiforme and erythema nodosum are not specific manifestations of rheumatic fever activity.

Subcutaneous nodules are not frequently seen at the onset in patients of military age. Subcutaneous nodules when present indicate a severe rheumatic activity.

Epistaxis is common at the onset of the disease in children. In the age group from 18 to 25 years 0.3 per cent of patients show this phenomenon. However, in another study Montgomery[8] has shown that there is a definite increase in capillary permeability and fragility in persons in the rheumatic state.

Concomitant with the onset of the disease there is an increase in the leukocyte count and an elevation of the blood sedimentation rate and of the antistreptolysin titer. None of these observations are specific for the rheumatic state.

[7a] Griffith, G. C.; Phillips, A. W., and Asher, Curtis: Pneumonitis Occurring in Rheumatic Fever, Am. J. M. Sc. **212**: 22-30 (July) 1946.

[8] Montgomery, H.: Capillary Fragility in Rheumatic Fever, Nav. M. Bull. **46**: 11 (Nov.) 1946.

THE CLINICAL TYPES OF RHEUMATIC FEVER

There are four clinical types of rheumatic fever recognizable, namely, the acute fulminating, the subacute polycyclic, the subacute monocyclic and the subclinical.

Acute Fulminating Type.—The acute fulminating type was found to occur at a rate of 4.3 per cent in a series of patients who showed evidence of rheumatic activity for more than six months. This type is frequent in childhood. The acute fulminating type is characterized by a sudden onset with migrating polyarthritis, fever, restlessness, severe tachycardia, dyspnea and drenching sweats. Carditis appears rapidly as shown by dilatation, gallop rhythm, murmurs and at times pericarditis. Pneumonitis is present in many patients. Pneumonitis can be detected by careful physical examination but is more frequently diagnosed by the roentgenologic studies of the lungs. The migrating polyarthritis is of short duration although usually severe at the onset. The temperature is relatively high, ranging from 101 to 103 F. The acute febrile period lasts from ten to eighteen days and then subsides with a rapid convalescence or goes into a prolonged low grade state of activity. The tachycardia is decided and is the last sign of activity to disappear. The leukocyte count is moderately elevated with a great increase in the granulocytes. The urine may contain albumin and a moderate number of cells. Approximately 20 per cent of patients in this group show electrocardiographic changes indicative of myocardial and pericardial involvement. The acute fulminating type of disease usually terminates with one cycle. This group represents those patients who are most susceptible to the disease. Although the mortality is low in the primary attack, this type is more liable to reactivation.

Subacute Polycyclic Type.—The subacute polycyclic type is similar to the acute fulminating type at the onset except that it is less severe. It occurs more frequently. The percentage of occurrence in this series of patients was 27.6 per cent. The cycles may be short and spaced at long intervals, or in the more severe subtypes the cycles may be long and spaced at shorter intervals of time. It is in this type of rheumatic fever that the mortality is the greatest. In this series of patients 63.6 per cent of the fatalities occurred in the subacute polycyclic type of the disease. Likewise in this group with repeated cycles of activity the most extensive cardiac enlargement and the most frequent signs of endocarditis and pericarditis are found. During one or all of the cycles pneumonitis of greater or less degree may occur. After the first cycle, polyarthritis is usually absent and the response to salicylate therapy is poor. Congestive heart failure complicating carditis occurs almost exclusively in this group of cases.

Subacute Monocyclic Type.—The subacute monocyclic type, the most frequently observed of the four types, occurred in this series in 61.3 per cent of the patients. The onset may be mild and scarcely recognizable, or it may be moderately severe with moderate fever, mild migrating pains, a definite tachycardia and moderate elevation of the leukocyte count and blood sedimentation rate. The response to salicylates is usually prompt, and the acute onset lasts for seven to fifteen days. Thereafter the course may be that of a rapid return to the stage of quiescence so that full duty may be resumed in from four to six months; or the course may be long with signs of mild activity persisting over a period of six to nine or more months.

Subclinical Type.—The subclinical type was found in 5 per cent of the cases. This group comprised those patients who may or may not have had an infection of the upper part of the respiratory tract and who in the course of a follow-up examination were found to have definite signs of rheumatic heart disease. Such signs are those of enlargement of the cardiac chambers, mitral and/or aortic insufficiency murmurs, paroxysmal tachycardias and auricular fibrillation. On careful observation this group of patients exhibited a few signs of rheumatic activity, such as a cyclic low grade temperature and a mildly increased sedimentation rate. At other times confirmatory evidence of rheumatic activity was not found. Two patients within this group died suddenly. Death in each instance was due to an acute angiitis with a collagenous change in the coronary arteries sufficient to cause an occlusion and myocardial infarction.

THE CRITERIA FOR THE DIAGNOSIS OF RHEUMATIC FEVER

The diagnostic criteria for rheumatic fever have been previously laid down by Swift[9] and Jones.[10] They are subdivided into major and minor groups: The major criteria are five in number, namely, a history of a previous attack, carditis, fever, migrating acute arthritis and chorea; the minor criteria in the order of their relative importance are pneumonitis, tachycardia, subcutaneous nodules, erythemas, epistaxis and purpura, loss of weight and abdominal pain.

MAJOR DIAGNOSTIC CRITERIA

A previous history of rheumatic fever was obtained in 28.1 per cent of the patients. Too often, however, mild arthralgia and muscle jelling are mistaken for a previous history. A previous history is of great diagnostic helpfulness when a patient presents himself with only one or two of the major criteria and two or three of the minor criteria.

Carditis is probably the most important of the major diagnostic criteria. Carditis can be said to be present when a tachycardia, especially a resting pulse rate of 100 or more, persists; when there is dilatation of the heart as shown by enlargement and/or gallop rhythm; when pericarditis is evidenced by a to and fro pericardial friction rub and/or a pericardial effusion; when myocarditis is demonstrated by dilatation, gallop rhythm and electrocardiographic changes, and when endocarditis is established by hearing definite organic cardiac murmurs.

Fever is considered the most frequent evidence of an active rheumatic state. It is the most reliable evidence of activity in the absence of demonstrable carditis. At the onset the temperature range may be normal or, as in the severer types, as high as 102 to 104 F. The degree of fever is not the paramount observation, but persistence of the fever is of utmost importance. No clinician can be sure that activity has ceased unless a carefully taken and recorded temperature curve has been observed for at least six to eight weeks' time. Persistent fever in the subacute types of the disease takes one of two forms. The more frequent form is an evening rise in temperature to 99 or 100 F. The more insidious and most frequently unobserved form is a cyclic type of curve. In this form the temperature remains at a normal or a slightly subnormal level for one to two weeks and then becomes mildly elevated for a few days or as long as a week. Fever is seldom the only evidence of rheumatic activity. Persistent fever must be viewed seriously especially if two or more minor criteria are present.

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[9] Swift, H. F.: Rheumatic Fever, J. A. M. A. 92: 2071 (June 22) 1929.

[10] Jones, D. E., cited by Stroud, W. D.: The Diagnosis and Treatment of Cardiovascular Disease, Philadelphia, F. A. Davis Company, 1940.

Polyarthritis, or migrating acute arthritis, for over three centuries has been considered the significant sign of the disease. In recent years the literature has emphasized the unimportance of the articular signs. In the primary attack the signs related to the joints are usually prominent and frequently constitute the presenting symptom and sign. The major joints become red, hot and swollen in a migrating fashion. With rest the articular signs disappear quickly. The salicylate compounds in adequate dosage are specific and prompt in action. The red, hot, swollen joints subside, leaving no residual pathologic conditions. In those patients in the third decade of life arthralgia may persist. The persistent arthralgia is not considered a sign of activity when all other criteria have disappeared. If one major or two minor criteria persist, then the complaint of painful joints must be considered as evidence of rheumatic activity.

Chorea is a relatively infrequent disease in the second and third decades of life. It has occurred in this series of patients in 0.047 per cent. None of the cases have exhibited the severe choreiform movements seen in childhood. There have been other neurologic manifestations occurring during the active course of the disease. In 2 patients temporary hemiplegia developed with gradual complete recovery. In 6 patients there developed unilateral or bilateral involvement of the brachial plexus varying from weakness and pain in the entire upper extremity to wrist drop. In 2 patients there developed temporary foot drop. These neurologic signs were not considered of psychic origin. With continued treatment of the rheumatic state the organic neurogenic signs cleared up promptly.

MINOR DIAGNOSTIC CRITERIA

The minor criteria in the order of their relative importance are herewith described.

Pneumonitis.—Pneumonitis was overlooked by most American clinicians until Boas and Schwartz,[11] Paul,[12] Swift,[9] Coburn [13] and Gouley and Eiman [14] called attention to the clinical and pathologic findings. The constant occurrence of pneumonitis in the acutely ill and the frequency with which it is found in the relatively mild stages of rheumatic activity emphasize its importance. Frequently the chief complaint of the patient is dyspnea and the first outstanding sign is that of pneumonitis; likewise it is frequently the first sign found in a current cycle and in a reactivation. When the roentgenologic examination of the lungs simulates an atypical pneumonia and the sputum yields no specific organism in a rheumatic fever patient, the diagnosis of rheumatic pneumonitis is considered established.

Tachycardia.—Tachycardia is a minor diagnostic criterion which, if constant and persistent during sleep, is of positive value. Paroxysmal tachycardia and auricular fibrillation were infrequent in this series of patients.

Subcutaneous Nodules.—Subcutaneous nodules are not seen frequently. They are a definite sign of activity. In the past their significance has been considered ominous, but perhaps this has been because they were not looked for carefully in the subacute and mild cases. They are a diagnostic sign but do not carry the poor ultimate prognosis formerly attributed to them.

The Purpuras and Epistaxis.—There is a definite increase in the fragility and permeability of the capillaries in the rheumatic subject. Purpuric manifestations are seen but seldom. Not over 0.3 per cent in the entire series showed purpura. Epistaxis is of similar significance and occurs infrequently in patients in the second and third decades of life. When purpura is present it is a helpful diagnostic sign.

Loss of Weight.—Loss of weight is a common occurrence in the acute phases of the active state and gain in weight is commensurate with the improvement in the patient.

Abdominal Pain.—Although abdominal pain has been considered of great importance in the literature, it is a relatively uncommon occurrence late in the disease. At the onset of an acute episode there may be abdominal pain without definite signs of localization, but if there is a previous history of rheumatic fever and the shortness of breath and tachycardia seem out of proportion to the fever of the patient, and especially if there are articular manifestations, it is safe to wait and watch; but if appendicitis cannot be ruled out, then perform a surgical operation, as the risk is small.

Recurrent Cycles.—Recurrent cycles of rheumatic fever may be initiated by surgical procedures such as dental extractions or tonsillectomy. The fracture of bones is almost sure to set up a recurrent cycle of activity. Fractured bones must be firmly fixed as soon after fracture as possible. It is unwise to extract teeth or to perform a tonsillectomy until six months has elapsed after all signs of activity of the rheumatic process have ceased.

Laboratory Data.—Results of laboratory tests are helpful but not specific in rheumatic fever. There is no specific laboratory diagnostic test.

Anemia.—The secondary type of anemia may develop rapidly in the extremely acute forms of rheumatic fever. In the mild types of the disease anemia is uncommon.

Leukocytosis.—The white blood cell count during the acute onset may be as high as 15,000 to 24,000 with as much as 90 to 95 per cent polymorphonuclear leukocytes. In the subsiding stage the leukocyte count falls rapidly to normal and is not a reliable index to the degree of activity.

Antistreptolysin Titer.—The antistreptolysin titer is elevated at the onset of disease and continues to remain elevated for a long time. Because of the technical difficulties of the determination and because the titer remains elevated after other signs of activity have disappeared, it is not a satisfactory guide as to the degree of activity or the indicated treatment. Its greatest value is in the etiologic study of rheumatic fever.

Blood Sedimentation Rate.—The sedimentation rate is elevated during the phase of rheumatic activity. It is the best single guide to the degree of such activity.

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[11] Schwartz, S. P., and Boas, E. P.: Am. Heart J. **2**: 375 (April) 1927.

[12] Paul, J. R.: Medicine **7**: 383 (Dec) 1928.

[13] Coburn, A. F.: The Factor of Infection in the Rheumatic State, Baltimore, Williams & Wilkins Company, 1931.

[14] Gouley, B. A., and Eiman, J.: Am. J. M. Sc. **183**: 359 (March) 1932.

If the sedimentation rate remains elevated when all other signs of activity have disappeared, then the clinician must rule out other causes for an increased rate of sedimentation.

Electrocardiographic Changes.—There are three electrocardiographic changes indicative of carditis: first, a shifting auriculoventricular conduction time, especially if the PR interval is well over 0.24 second. This change is seen in varying degrees up to the Wenckebach phenomena and complete auriculoventricular dissociation; second, the typical electrocardiographic picture of pericarditis; and third, the QRS and T wave changes which are seen in myocardial damage resulting from the anoxia of coronary insufficiency. The coronary insufficiency is the direct result of coronary arteritis of moderate to severe degree.

Urinary Changes.—The urinary changes in rheumatic fever have been minor and notable for their absence. In the acute phases of the disease the urinalysis may reveal albumin and a moderate number of cells; in the subsiding phase, the urinalysis is usually normal.

Causes of Death.—The frequency of death from the primary attack of rheumatic fever was small. Only 13 deaths occurred in over 10,000 rheumatic fever patients of military age. The causes of death in this group, in order of frequency, were congestive failure, pneumonitis, coronary occlusion with myocardial infarction, and shock resulting from necrosis of the adrenal gland.

THE DIFFERENTIAL DIAGNOSIS

Rheumatic fever in its acute form must be differentiated from undulant fever, rheumatoid arthritis, chronic osteoarthritis, tuberculosis, Reiter's syndrome and the collagenous diseases. This is best done by evaluating the previously outlined criteria and by close observance of the clinical course of the disease.

Undulant fever is ruled out by a persistently negative cross agglutination test and by the failure of carditis to develop.

Rheumatoid arthritis is difficult to differentiate early, but time with the visual as well as roentgenologic changes in the joints points to this entity rather than to rheumatic fever.

In osteoarthritis the development of roentgenologic evidence of articular disease and the lack of most of the major and minor criteria of rheumatic fever serve to make the differentiation early.

Tuberculosis is confused with rheumatic activity by the prolonged fever, but here again the absence of the other four major criteria and of most of the minor criteria rules out rheumatic fever.

TREATMENT

The essential problem in the treatment of rheumatic fever is the prevention of disabling heart disease. If the fulminating polycyclic type of rheumatic fever could be attenuated and shortened and if the monocyclic and subclinical types could be prevented from causing severe inflammatory-like reactions in the vascular tissues then disabling heart disease could be avoided. It is believed that angiitis may continue indefinitely after the initiation by an antigen-producing organism in the throat. Since there is as yet no effective method known to destroy the antigen-producing bacterial agent or to prevent the nonsuppurative inflammatory reactions in the vascular tree, there must be an alinement of all the available therapeutic agents to prevent death or at least to reduce cardiac damage to the minimum.

The treatment of the rheumatic state is divided loosely into two parts according to the stage of the disease—the stage of activity and the stage of quiescence.

The Stage of Activity.—The point at which the physician should start treatment of the active rheumatic state is difficult to determine. Every patient with an acute suppurative sore throat due to hemolytic streptococci is a potential subject for rheumatic fever. Observation of the patient with a hemolytic streptococci infection of the throat should be maintained over a longer period of time than that which is usual, in order to detect the onset of an active rheumatic state at the earliest possible moment. The patient who is slow in recovering from the acute throat infection due to hemolytic streptococci and who fatigues easily, having a slight evening fever, an elevated blood sedimentation rate and a high antistreptolysin titer, is one in whom rheumatic fever is likely to develop. With the onset of the active stage of rheumatic fever early recognition is requisite, and the patient should be placed immediately on a carefully planned and administered regimen.

Rest.—Absolute rest in bed is imperative and must be continued in varying degrees until the signs of rheumatic activity have disappeared. Rest means limited activity in bed, quiet surroundings conducive to sleep and diversionary interests. As the patient improves rest must be judiciously proportioned to the state of the disease.

Nursing Care.—Nursing care wisely and intelligently carried out does much to promote rest, sleep and mental diversion. A daily bath with tepid water, clean linen and attention to diet and to elimination are elementary but essential nursing services.

Diet.—The diet should be highly nutritious, of at least 3,500 calories per day given in liquid to soft or solid form dependent on the patient's temperature and general condition.

The Salicylates.—Only the salicylates have survived the test of time in the treatment of rheumatic fever. Most clinicians agree that the salicylates have an analgesic and antipyretic action in rheumatic fever. Few, however, feel that salicylates modify the progress of the disease process. Salicylates do relieve pain, lower the temperature and hasten the absorption of the transudate in the serous cavities during the first attack, but they have no apparent effect on the disease process after the sensitizing stage is passed. Furthermore, the salicylates have little if any analgesic and antipyretic effect in the second and third cycles and in the course of the prolonged monocyclic cases.

Salicylates in the form of sodium salicylate 25 grains (1.62 Gm.) and sodium bicarbonate 10 grains (0.65 Gm.) every four hours or acetylsalicylic acid 20 grains (1.29 Gm.) and sodium bicarbonate 20 grains (1.29 Gm.) every four hours, day and night, with 3,000 cc. of water, elevate the salicylate concentration to the optimum level of 30 to 50 mg. per hundred cubic centimeters of blood within twenty-four to forty-eight hours. If the salicylates are administered absolutely regularly with an adequate quantity of water the level in the blood remains at or near the optimum. The salicylates are promptly absorbed from the upper part of the gastrointestinal tract and appear in the blood within fifteen to thirty minutes, and the optimum level can be maintained with the aforementioned dosage. The excretion of the drug is rapid through the kidneys so that within twenty-four hours after the cessation of salicylate therapy little trace, if any, can be found in the blood. The drug may be administered in the form of the sodium or acetyl salts without alteration of the optimal blood level. The drug should never be given in the enteric-coated tablets, as it is absorbed from the upper part of the gastrointestinal tract, and if the enteric-coated tablets are slow in disintegrating in the colon a toxic dose may suddenly be absorbed from the accumulated tablets resting there.

The salicylates are unpleasant to take orally and may induce *tinnitus aurium*, burning of the eyes, sweating, cerebral excitement, irritability and irresponsibility, as well as gastric irritation. However, in the dosage mentioned such symptoms are infrequent. If the patient is ambulatory and signs and symptoms of salicylism develop, the return to rest promptly affords relief. Gastric irritation is readily avoided by the ingestion of an abundance of water and food with the drug. The only reason for the administration of sodium bicarbonate with the salicylates is to prevent gastric irritation. The hydrochloric acid of the stomach changes the sodium and acetyl salts to salicylic acid, in which form it appears in the blood. The use of somewhat smaller doses of sodium bicarbonate than those reported by Smull, Wegria and Leland[15] (1944) do not lower the blood salicylate level.

The intravenous administration of the drug is undesirable and unnecessary except in those rare instances in which salicylates cannot be given orally. When the salicylates are swallowed according to the aforementioned dosage, the level is consistently maintained. If the level is low the patient is not receiving the drug regularly; if the level is too high there has been an insufficient fluid intake. The administration of 1,000 cc. of a 1 per cent solution of sodium salicylate intravenously over a period of six to ten hours not only tires the patient but may throw an added strain on the right side of the heart. The administration of 10 cc. of a 10 per cent solution of the drug intravenously raises the level adequately and does no harm when given at the rate of 1 cc. per minute through a 26 gage needle but may sclerose the veins, making frequent administration difficult. In congestive failure of the heart there is slow absorption of the drug and salicylates do not benefit the patient materially. Salicylates per rectum are poorly absorbed. A study on the absorption of the salicylates shows that no appreciable amount of the drug reaches the blood stream when administered per rectum.[15a] Therefore oral administration is the method of choice.

Digitalis.—Treatment with digitalis is of doubtful value in the active stage of rheumatic fever. Its use is indicated only with the onset of congestive failure during the course of an active carditis. The drug is administered in full dosage orally. The method calls for a dosage of 1 U. S. P. unit per 10 pounds (4.5 Kg.) of body weight, adding 1 unit (1½ grains, 1 Gm.) for each additional day required to complete digitalization, and thereafter a maintenance dose of 1 U. S. P. unit is to be given daily. It has not been necessary to use digitalis or quinidine sulfate in the treatment of the infrequent instances of paroxysmal auricular fibrillation and the more infrequent cases of paroxysmal tachycardia, as these conditions subside spontaneously with rest. Quinidine is seldom used because of the infrequent occurrence of the paroxysmal tachycardias. Premature contractions occurring in the acute phase of the disease are not eliminated by the use of a daily ration of this drug. Rest and the avoidance of cigarets are measures which are of distinct value. Quinidine and *p*-hydroxy-*α'*-methylphenylethylamine hydrobromide have not been useeful in the correction of arrhythmias during the stage of carditis.

Oxygen.—Oxygen is of great value in the treatment of rheumatic pneumonitis and congestive failure. Restlessness, cyanosis, dyspnea and even tachycardia are helped by the administration of oxygen. Oxygen is given early and as long as the patient is embarrassed. It is easily administered by the nasal tube method, passing approximately 4 liters of oxygen per minute through a humidifier and into the nasopharynx. By this method the coldness of the oxygen tent is avoided, the patient is less annoyed and feeding and nursing care are rendered with greater ease. The saving in the amount of oxygen used is at least one half.

Diuretics.—Diuretics are used only when there is evidence of congestive heart failure. The diuretics are believed to be of greater value than any other drugs in the treatment of congestive failure in acute carditis. It has been observed that right-sided failure of the heart is frequently primary. It is believed that this is due to the associated rheumatic pneumonitis which decreases the vascular pulmonary tree to such an extent that the blood pressure in the lesser circulation is elevated and throws a marked strain on the right ventricle. The diuretics in the form of theobromine and sodium acetate in dosage of 7½ grains (0.49 Gm.) or theophylline ethylenediamine 3 grains (0.19 Gm.) four times a day are effective. If the engorged liver and the peripheral edema persist when absolute rest in bed, digitalis and xanthine diuretics have been used, then injection of the mercurial diuretics intravenously have been found helpful. In acute carditis the mercurial diuretics may produce anuria and therefore must not be used if there is evidence of renal impairment or inflammation.

Sulfonamide Drugs.—The sulfonamide compounds have been used in a large number of patients with rheumatic fever because of the apparent relationship between the streptococcic infection of the throat and the acute rheumatic state. Rheumatic fever patients with intercurrent tonsillitis, sinusitis or otitis media with positive hemolytic streptococcic cultures have been treated with a full dosage of sulfadiazine. The salicylates were continued at the same time. This method of treatment resulted in an appreciable increase in the number of rheumatic fever patients and in the number of recurrences.[7]

Penicillin.—Penicillin is not beneficial in the treatment of rheumatic fever. It is harmful when continued over a long period of time.[16] Penicillin is used in the treatment of the intercurrent infections.

Vitamins.—The food intake per patient should average 3,250 calories a day and since a varied diet is made available, supplementary vitamins should *not* be used routinely. In cases in which a patient has been seri-

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15. Smull, K; Wegria, R, and Leland, J Effect of Sodium Bicarbonate on Serum Salicylate Level During Salicylate Therapy of Patients with Acute Rheumatic Fever, J. A M. A **125**:1173 (Aug 26) 1944. Butt, H. R., and others· Studies in Rheumatic Fever, J. A M. A. **128**:1195 (Aug 25) 1945.

15a. Huntington, R. W, and Griffith, G C · Studies in Rheumatic Fever: Absorption of the Salicylates, Ann Int Med **24**:1029 (June) 1946

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ously ill and the dietary intake has been deficient, vitamins are added. The use of ascorbic acid has not caused a more rapid convalescence as indicated by a leveling of the temperature curve and the sedimentation rate. Ascorbic acid lessens gastric irritation. In a small series of cases of rheumatic purpuras, vitamin P (hesperidin) has not corrected or prevented the recurrent attacks of petechial hemorrhages.[17] Vitamin K and calcium in large dosage have likewise been ineffective in correcting the increased capillary fragility common to the rheumatic state.

Iron.—Iron is of value in the correction of the anemias secondary to the active rheumatic state. Ferrous sulfate 6 grains (0.39 Gm.) three times a day is adequate dosage.

Fever Therapy.—Fever therapy has not been evaluated. It has been shown by Sutton and others [18] that chorea clears up rapidly with fever therapy. Sutton's recent comparative study [19] of treated and untreated chorea patients has suggested that this form of therapy may have a beneficial effect on the severity of subsequent cardiac lesions. A high ketogenic diet and salicylate blood level have adequately controlled the choreiform symptoms.

Roentgen Therapy.—Roentgen therapy has been advocated in the treatment of the active phase of carditis by Levy and Golden.[20] On the basis of their work 201 cases of active rheumatic fever were selected. The criteria for selection were that the disease must have been active with one or more recurrences for six consecutive months and had not reached the quiescent state on the usual therapy. The case histories, physical findings and laboratory procedures were analyzed before roentgen therapy was initiated and again six weeks after the series of treatments had been completed. The roentgenologist did not know the state of activity of the disease in any case and administered 100 r through the myocardium weekly for five weeks to 71 patients, the same dosage through the myocardium and over the cervical sympathetic ganglions to 63 patients and no treatment to 67 patients. Thus 71 patients received treatment of 500 r to the myocardium; 63 received the same dosage to the myocardium and to the cervical sympathetic ganglions and 67 received no treatment. In the last group the exposed field was blacked out by a lead filter. Of the 71 patients who received treatment to the myocardium, 49.4 per cent obtained no effect; 47.2 per cent showed slight improvement and 1.4 per cent pronounced improvement. Of the 63 patients who received treatment to the myocardium and cervical sympathetic ganglions, 65 per cent showed no effect while 33.3 per cent showed slight improvement and 1.6 per cent definite improvement. Of the 67 who received no treatment except psychic influences 59.7 per cent showed no effect, while 29.8 per cent showed slight improvement and 10.4 per cent well defined improvement. From this study it is believed that roentgen therapy had no therapeutic effect against rheumatic fever. There may have been a slight psychogenic effect in that the patient thought something was being done for him.

Foci of Infection.—Removal of foci of infection is not attempted during the active phase of the disease. The removal of foci of infection would seem to be a logical procedure in the quiescent stage except for two factors: first, the difficulty in determining the point at which the disease is quiescent even though all clinical and laboratory criteria for such have been met; and, second, the frequency with which recurrences of the active phase have been noted following tonsillectomy or dental surgery. Statistical proof shows the undesirability of removing teeth or tonsils until at least six months have elapsed after the disease has been thought to be in the quiescent state.[20a]

Blood Plasma.—It is believed that blood plasma should not be used in the active phase of rheumatic fever. Seven out of 9 patients were definitely worse after the administration of pooled plasma.

Serums and Vaccines.—Serums and vaccines have proved disappointing in the past (Hitchcock, McEwen and Swift,[21] Wilson [22] and Coburn [23]). Therefore they have not been used or further investigated.

Treatment in the Inactive or Quiescent Stages.—The treatment in the quiescent stage differs from that planned for the active stage largely in degree. The periods of rest are shortened. The nursing care is limited to little beyond the recording of the daily temperature curve and the supervision of the reconditioning program.

Climatotherapy.—The exposure of the rheumatic fever patient to a warm, dry climate and regulated heliotherapy is of some general benefit. The hemolytic streptococcus does not die out in a warm, dry climate. The incidence of rheumatic fever in Naval training camps in the temperate zone has not been definitely greater than that in the training camps in the subtropical zone. The type of rheumatic fever differs, however. It is believed that a warm, dry climate has a beneficial effect on the disease. Exposure to sunshine, however, must be gradual and carefully regulated.

Physiotherapy.—Physiotherapy is definitely harmful in the transudative stage of the rheumatic polyarthritis. It is of value in the older age group when there is residual muscular weakness, jelling, arthralgia, fibrositis and bursitis.

Avoidance of Infection.—Since there is a direct relationship between the hemolytic streptococcic infection of the throat and rheumatic fever, every effort should be made to protect those patients who have had the disease. With the onset of an acute infection of the upper part of the respiratory tract rest in bed is essential. Isolation technic should be practiced and the patient treated with 300,000 units of penicillin daily for two or three days. Various procedures such as the oiling of floors and blankets and sweeping with sawdust and pushbroom are used to minimize the dissemination of dust and have proved beneficial in preventing the spread of respiratory infections.

Salicylates apparently do not protect a sensitized person from recurrences nor are they of much benefit in the treatment of recurrences, except for their antipyretic and analgesic effect. The administration of sulfanilamide once a hemolytic streptococcic infection has started has not prevented rheumatic recrudescences (Coburn,[24] 1944). The daily administraion of sulfathiazole or sulfadiazine throughout the year will reduce the incidence of streptococcic infection 80 per cent (Coburn,[24] 1944). A well controlled prophylaxis program is necessary to establish conclusively the advantages and disadvantages of such a procedure, which may involve serious hazards, and probably increases the number of patients who develop the poststreptococcal syndrome.

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[17] Montgomery, H.: Capillary Fragility in Rheumatic Fever, U. S. Nav. M. Bull. **46**: 11 (Nov.) 1946.

[18] Sutton, L. P.: Treatment of Chorea by Induction of Fever, J. A. M. A. **97**: 299 (Aug. 1) 1931. Sutton, L. P., and Dodge, K. G.: J. Pediat. **3**: 813, 1933; J. Lab. & Clin. Med. **21**: 619, 1936.

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[20] Levy, R. L., and Golden, R.: Proc. Soc. Exper. Biol. & Med. **23**: 351, 1926; Am. J. Roentgenol. **18**: 103, 1927; Am. Heart J. **4**: 127, 1928; Am. J. Roentgenol. **29**, January 1933.

[20a] Griffith, G. C.: Rheumatic Fever and Tonsillectomy. Paper read before the Los Angeles Mid-Winter Research Study Club, January, 1947.

[21] Hitchcock, C. H.; McEwen, C., and Swift, H. F.: Am. J. M. Sc. **180**: 497, 1930.

[22] Wilson, M. G.: The Biologic Products of Streptococcus Cardio-arthritidis, J. A. M. A. **94**: 842 (March 22) 1930.

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The use of penicillin in a prophylactic program, especially penicillin in pastilles for the prevention of the streptococcic infections, is now feasible. The employment of penicillin therapy for the acute hemolytic streptococcic infections of the throat does not tend to influence the rate of occurrence of recrudescence of rheumatic fever.

Reconditioning.—The purpose of reconditioning is threefold: first, to increase the blood circulation in the vital organs and thus promote oxygenation of the tissues; second, to prevent the development of muscular weakness, and third, to maintain interest and morale. A reconditioning program should begin as soon as the patient is well enough to cooperate in supervised deep breathing exercises. The Goldthwait breathing exercises are used. Deep breathing exercises are followed by muscle extension and flexion exercises in bed. When the patient has reached the inactive stage of the disease graduated exercises should be prescribed so that fatigue may be prevented and muscle tone maintained.

Educational Program.—As soon as the patient is comfortable, diversional reading is begun, followed by studies within the patient's field of interest. By occupational, educational and reconditioning programs the patient's morale is maintained, recovery is hastened and fewer psychoneurotic traits develop.

SUMMARY

In this overall survey of a large group of rheumatic fever patients of military age the following observations deserve further emphasis:

1. Rheumatic fever definitely followed epidemics of the streptococcic throat infections.

2. The sulfonamide method of treatment of the streptococcic throat infections did not prevent the development of the poststreptococcic rheumatic syndrome.

3. The largest number of the rheumatic fever patients of military age fell into the subacute monocyclic type, 61.3 per cent, and the frequency of carditis in this group emphasizes its importance in relation to the development of chronic valvular heart disease.

4. Pneumonitis is second to carditis in importance because of its frequency, its relation to primary right sided heart failure and as a cause of death.

5. Every patient with a streptococcic throat infection is a potential rheumatic fever subject and the early recognition of the poststreptococcic rheumatic syndrome and the institution of adequate early salicylate therapy is paramount.

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[24] Coburn, A. F.: Canad. M. A. J. **51**: 366, 1944.

ATYPICAL FEATURES OF RHEUMATIC FEVER IN YOUNG ADULTS

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Rheumatic fever has been described so often and so well that the classic variety of the disease is universally recognized and promptly diagnosed, even by those whose experience in the field has not been large. That atypical forms of the acute phase of the disease exist and pass unrecognized is, however, well demonstrated by the frequent finding of late valvular disease among patients who give no history of an acute episode of fever or involvement of joints. In a large naval hospital where many patients with proved or suspected rheumatic fever were under observation, many of the atypical phases of the acute rheumatic state were seen and followed over considerable periods. It is the purpose of this paper to discuss some of the less well known clinical syndromes of rheumatic fever in the hope that such a report will assist others in the earlier diagnosis of similar cases.

CRITERIA FOR DIAGNOSIS

Jones,[1] in a helpful paper, has discussed the criteria for the diagnosis of rheumatic fever. He has divided the clinical manifestations into: (1) major manifestations (carditis, arthralgia, chorea, nodules and verified history of previous rheumatic fever) and (2) minor manifestations (fever, abdominal or precordial pain, erythema marginatum, epistaxis, pulmonary changes and abnormal laboratory findings). He has suggested that any combination of the major manifestations or the presence of one major and two minor manifestations of the disease gives one a reasonably certain basis for diagnosis. We have attempted to use these criteria as a working plan in our cases but have encountered some difficulty in depending on them entirely. Chorea and subcutaneous nodules were only rarely present in our adult cases and so were of limited diagnostic value. A history compatible with previous rheumatic fever was present in approximately a third of our cases, but if one had insisted on a medically verified history the percentage would have been considerably lower. Cardiac enlargement, pericarditis, congestive failure and significant cardiac murmurs were infrequent at the time of admission. These were present in less than 10 per cent, if one interprets a clinically significant cardiac murmur as being either a diastolic murmur or a long, loud systolic murmur not varying with respiration or position. Abnormalities in the electrocardiogram remained, therefore, as the principal reliance in the diagnosis of the rheumatic state. Prolongation of the PR interval and inverted T waves in lead 1, 2 or 4 constituted more than 90 per cent of the significant

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[1] Jones, T. D.: The Diagnosis of Rheumatic Fever, J. A. M. A. **126**: 481-484 (Oct. 21) 1944.

changes noted. Slight deviations of the ST segment, ectopic beats and slight lowering of the T waves were not considered as clinically significant.

Arthralgia, with or without visible evidence of acute arthritis, was the most commonly encountered clinical symptom. Objective articular manifestations were often absent, although the subsequent course of the disease indicated that the subjective pains in the joints were significant of rheumatic disease. It became apparent that the only common major manifestations (according to the Jones criteria) were arthralgia or arthritis and abnormalities in the electrocardiographic pattern[1]. At times one or the other was absent, and under such circumstances the minor diagnostic criteria had of necessity to be utilized.

Of the minor manifestations, an elevated sedimentation rate and elevation of temperature were the most consistently helpful. It was extremely rare to see a patient with active rheumatic fever without elevation of temperature or with a normal sedimentation rate, although such negative findings were observed on occasion in cases in which carditis subsequently developed. The elevation of temperature was often of short duration whereas the sedimentation rate was usually the last sign of activity to disappear. The sedimentation rate was, therefore, of more practical value than elevation of temperature, especially if the disease was not encountered early in its course. Tachycardia was present usually only in the early stages, with fever (unless pericarditis or cardiac failure was present), and often the cardiac rate was normal despite other obvious signs of rheumatic activity, including carditis. Epistaxis, erythema marginatum, abdominal and precordial pain and pneumonitis were all observed but were sufficiently infrequent to be of little diagnostic aid in many cases. Anemia was surprisingly uncommon, considering its frequency in the rheumatic fever of childhood, but occasionally it was helpful in indicating the possibility of continued rheumatic activity rather than as an initial diagnostic aid. Leukocytosis was present in approximately two thirds of the cases observed by us but was usually of relatively short duration. The elevated sedimentation rate was, as has been previously stated, a more reliable and persistent sign than other minor manifestations.

The presence of a known streptococcic disease within the previous six to eight weeks was helpful in focusing attention on the possibility of rheumatic fever, and many mild rheumatic infections were detected by following the sedimentation rate and examining the electrocardiographic pattern. It was in this group of cases particularly that many of the atypical early clinical features of rheumatic fever were recognized.

Our experience, therefore, has indicated that arthralgia or arthritis, especially following a known streptococcic disease of the upper part of the respiratory tract, in association with significant abnormalities in the electrocardiogram, with fever and an elevated sedimentation rate, is the most common combination of symptoms and signs in young adults with rheumatic fever. The other major and minor manifestations, as outlined by Jones, were not sufficiently common in the present series of cases to be used as the sole possible criteria for a diagnosis.

CLINICAL MANIFESTATIONS

I. *Minimal Presence or Complete Absence of Articular Symptoms.*—The absence or insignificance of articular symptoms in rheumatic fever has frequently been described in the literature. This feature is relatively common in patients who have recently had a streptococcic infection, particularly scarlet fever. We have frequently observed patients convalescing from the last-mentioned disease or from an infection of the upper part of the respiratory tract who, because of failure to regain strength or because of vague arthralgia, were sent to the hospital for study. An abnormal electrocardiogram was demonstrated, and the patients subsequently were shown to have rheumatic fever. Some of these patients have had no articular symptoms whatever at any time; in others the symptoms referable to the joints were mild and entirely subjective. Nevertheless, active carditis was eventually demonstrated in certain of these patients.

The significance of these late poststreptococcic manifestations has been the subject of a number of recent reports.[2] These papers have indicated that after scarlet fever or streptococcic pharyngitis approximately 15 to 20 per cent of adults will show clinical or electrocardiographic manifestations indistinguishable from those of rheumatic fever. In the patients described by these observers one group had classic rheumatic fever, while another group had vague arthralgia, feelings of ill health and mild secondary rises of temperature. These symptoms were often so mild that a physician would hardly have been consulted. A third group remained completely asymptomatic; yet laboratory and electrocardiographic findings developed which were similar in all respects to those of the group that had frank rheumatic fever. These observations as well as our own strongly suggest that rheumatic fever following streptococcic diseases varies quantitatively in a striking manner and may present itself with protean manifestations ranging from a clinically silent to a clinically fulminant disease. On the basis of our own experience, the importance of care- [illegible] eptococcic symptoms with the [illegible] fever in mind can hardly be overestimated.

II. *Monarticular Involvement.*—The classic feature of rheumatic fever is a migratory polyarthritis. It must, however, be emphasized that in many cases rheumatic fever may show monarticular involvement throughout its entire course or for a period before the typical polyarthritic spread occurs. Recent articles from the military services have noted this feature.[3]

Our experience has been that the joints of the lower extremities were those most commonly involved. The frequency of monarticular involvement of the ankles, the small joints of the feet and the knees probably was responsible for erroneous diagnoses of sprained ankle, flat feet or sprained knee which were initially often made in these cases. When an injury does not seem to be the obvious explanation for pain and swelling in a single joint of the lower extremities, it is necessary to consider the possibility of rheumatic fever.

III. *Onset and Major Manifestations in Hands and Feet.*—It is not often appreciated that involvement of the small joints of the hands and feet may dominate the clinical picture of rheumatic fever and often may be the sole articular manifestation of the disease. The following report of a case demonstrates this fact and emphasizes that a careful study of the aspects of the disease other than articular may reveal the significance of unusual symptoms referable to the joints.

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[2] Rantz, L. A.; Boisvert, P. J., and Spink, W. W.: Etiology and Pathogenesis of Rheumatic Fever, Arch. Int. Med. **76:** 131-138 (Sept.) 1945. Rantz, L. A.; Spink, W. W., and Boisvert, P. J.: Abnormalities in the Electrocardiogram Following Hemolytic Streptococcus Sore Throat, ibid. **77:** 66-79 (Jan.) 1946. Watson, R. F.; Rothbard, S., and Swift, H. F.: The Relationship of Postscarlatinal Arthritis and Carditis to Rheumatic Fever, J. A. M. A. **128:** 1145-1152 (Aug. 18) 1945.

[3] Rosenberg, D. H.: The Clinical Aspects of Rheumatic Fever in Adults, New England J. Med. **234:** 148-152 (Jan. 31) 1946. Kimbro, R. W.: A Report on One Hundred Cases of Rheumatic Fever in Young Adults, Texas State J. Med. **41:** 296-300 (Oct.) 1945.

CASE 1.—A man aged 18, who had severe febrile pharyngitis on March 5, 1945, was treated with sulfadiazine and was returned to duty four days later without residual symptoms. He was transferred to a new station and there reported to the sick bay on April 10, complaining of swelling and stiffness of the interphalangeal joints of the index and middle finger of each hand, of twenty-four hours' duration. It was observed that he had a temperature of 100 F. and that his hands were swollen and slightly tender, with pain on active and passive motion of the affected joints. The sedimentation rate was 25 mm. in one hour (Westergren). A tentative diagnosis of rheumatic fever was made, and the patient was transferred to a naval hospital two days later. On arrival his joints were apparently normal except for slight tenderness on manipulation of the joints that had been so painful and swollen forty-eight hours before. A faint maculopapular rash was present over his thorax, abdomen, hips and thighs. There was a soft apical systolic murmur.

The laboratory data revealed normal results of urinalysis, a hemoglobin content of 87 per cent, a leukocyte count of 9,200 per cubic millimeter of blood, a negative Kahn reaction and a sedimentation rate of 29 mm. in one hour (Westergren method). The vital capacity was 4.2 liters. The electrocardiogram revealed partial heart block, with a PR interval of 0.28 second.

The patient was given routine treatment with rest in bed and 10 Gm. of salicylates daily, the doses being administered every four hours. At no time did he have further pains in the joints, and he was afebrile and asymptomatic throughout his stay in the hospital. The partial heart block was still present on April 15 (PR interval 0.32 second), but had disappeared by April 27 (PR interval 0.19 second). The T waves were upright in all leads. The sedimentation rate gradually fell from a level of 28 mm. per hour on April 17 to one of 7 mm. per hour on May 18.

It is apparent that this patient had rheumatic fever with involvement of the interphalangeal joints of each hand as the only articular manifestation of the disease. The articular symptoms lasted only forty-eight hours, but a prolonged PR interval was observed at a time when the joints were normal to physical examination. The sedimentation rate became normal after almost a month, being the last sign of rheumatic activity to disappear. It is to be noted that the leukocyte count was normal when other definite signs of activity were present.

IV. *Prodromal Aching for Days to Weeks Prior to Onset of Acute Arthritis.*—Rheumatic fever is usually thought to be a disease in which the articular symptoms appear rather abruptly and are acute. Nevertheless, fleeting but recurrent mild polyarthralgia without objective signs may precede the usual type of involvement of the joints. As the following report of a case indicates, polyarthralgia (even in the absence of objective involvement of the joints) subsequent to a known streptococcic respiratory infection should indicate the necessity for further study.

CASE 2.—A man aged 18 had a long-lasting febrile infection of the upper part of the respiratory tract in February 1945 and was hospitalized for a month. He had a residual cervical adenopathy but was otherwise well until about the middle of April, when he noted aching pain in the feet. He reported to his local sick bay where a physical examination was reported as negative and the sedimentation rate as 14 mm. in one hour. He was given sulfonamide drugs and salicylate preparations and assigned to light duty. The aching became milder, and he returned to full duty after a few days even though slight residual symptoms persisted. A week later he again reported to sick bay because of continued aching in the back in addition to the pain in the feet. The sedimentation rate at this time was reported as 27 mm. in one hour. After he had been kept under observation in the sick bay for several days, aching appeared in his toes. Objective findings were not observed although the pain in his joints became migratory in type. On the day before entry to a naval hospital (May 16) redness, pain and swelling developed in the toes of both feet, and in the evening he noted similar changes in both ankles.

On arrival at the hospital his only complaints were referable to his toes, the pain in the ankles having practically subsided. The right great toe was slightly red, swollen and extremely tender. The ankles were tender on pressure but were not badly swollen. The patient had a temperature of 103 F. and a pulse rate of 100. The heart was not enlarged, but there were a slight, soft apical systolic murmur and a diastolic gallop rhythm. The laboratory data revealed a normal urine, a hemoglobin content of 78 per cent, an erythrocyte count of 3,900,000 and a leukocyte count of 11,500 per cubic millimeter of blood with 75 per cent polymorphonuclear cells. The blood culture was negative on two occasions; the Kahn reaction was negative and the sedimentation rate was 28 mm. in one hour. The electrocardiogram on entry showed a PR interval of 0.28 second with a Wenckebach phenomenon and dropped beats (fig. 1).

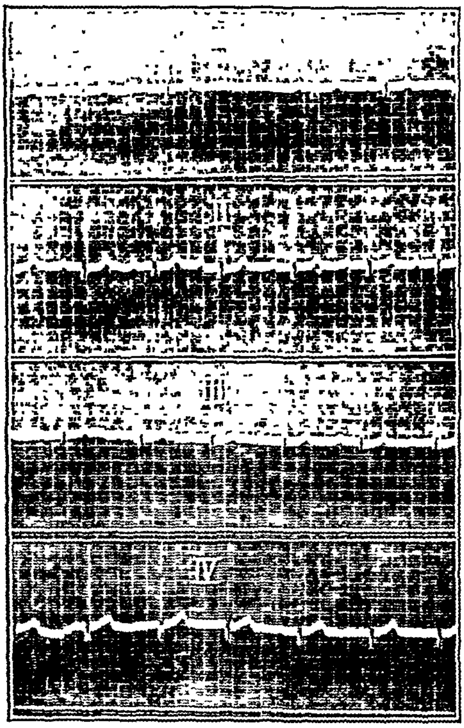

Fig. 1 (case 2).—Partial auriculoventricular block with Wenckebach phenomenon (lead 1).

The patient was put to bed and full doses of salicylates were administered. The temperature fell rapidly, being 100.4 F. on May 18 and normal thereafter. The sedimentation rate fell gradually, no significant change being noted for two weeks, but by June 25 it had fallen to 5 mm. in one hour. The partial heart block persisted until June 11; it was noteworthy that for weeks the PR interval was 0.24 to 0.28 second with cardiac rates in the sixties without dropped beats. On June 25 there appeared a short, rough aortic systolic murmur, grade 2 (on the basis of 1 to 4, in which 1 indicates the mildest and 4 the most severe condition). Administration of salicylates was continued until the patient's transfer to a convalescent hospital on July 24, at which time his electrocardiogram was normal and his sedimentation rate varied from 5 to 10 mm. in one hour.

Case 2 illustrates that rheumatic fever may be initiated by migratory aching and stiffness of several joints lasting days to weeks before fever, acute polyarthritis and carditis appear. The interpretation of polyarthralgia as an isolated clinical feature is often difficult, but an elevated blood sedimentation rate and a previous history of an infection of the upper part of the respiratory tract should have suggested the diagnosis in this case. The myocardial and valvular damage that eventually resulted might have been prevented by earlier diagnosis and treatment. The apical diastolic gallop was the earliest clinical sign of carditis in this case, although later a significant aortic murmur appeared.

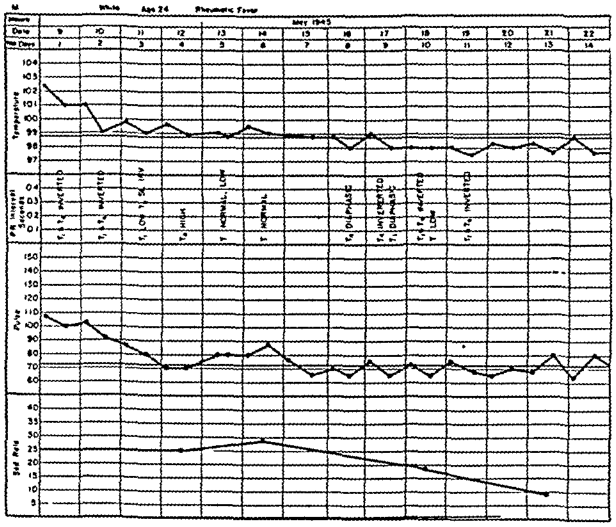

Fig. 2.—Typical temperature chart in rheumatic fever treated with salicylates.

V. *Recurrent Acute Arthritis of Short Duration With Apparently Complete Subsidence Between Attacks.*—Polycyclic rheumatic fever is a well recognized variety of the disease, but in the typical cases each cycle represents fairly classic features of rheumatic fever of significant duration. We have observed a number of cases in which apparently complete relief of acute arthritis and fever and reduction of the sedimentation rate occurred in a few days on relatively small doses of salicylates. It was not until this type of episode was repeated several times, often with a different group of joints involved in each attack, that the patient in question was referred to a hospital for study. In most of our cases of this type the recurring arthritis reappeared in a few days, often within a week after the patient had been returned to duty.

Case 3.—A man aged 25 was admitted to a naval hospital on April 3, 1945 with a diagnosis of acute arthritis. He had had a sore throat on several occasions in the past two years, the last time on Feb. 15, 1945. On March 10 aching pain without swelling had developed in the right knee. He continued ambulant, but a week later the pain was severe and definite swelling had appeared. He reported to his sick bay, where it was noted that his right knee was swollen, red, hot and tender. The sedimentation rate was 25 mm. in one hour and the temperature 100.2 F. He was put to bed with hot packs and given 3 Gm. of salicylates daily. He became afebrile in five days and the joint symptoms subsided within a week. The sedimentation rate was 10 mm. in one hour on March 26. No electrocardiographic study was done at this time. He was returned to duty on March 29. Within forty-eight hours pain and swelling in the right knee had reappeared, and the next day the left knee was similarly affected.

On arrival at the naval hospital examination revealed a temperature of 100 F. and slight swelling and tenderness of both knees. Examination of the heart gave essentially negative results. Laboratory studies revealed moderate anemia; the sedimentation rate was 25 mm. in one hour and the electrocardiogram was normal.

Salicylates, 10 Gm. daily, were administered and strict rest in bed was ordered. The patient was afebrile within twenty-four hours and the arthritis was completely quiescent within a week. Serial electrocardiograms taken twice weekly for two months showed no abnormalities. The sedimentation rate fell gradually, serial determinations twice a week being 18, 15, 13, 11, 12, 10, 14, 13 and finally 5 mm. per hour on May 21, seven weeks after entry.

On May 22 subcutaneous nodules about the knees were noted, and on full range of motion his knees were slightly painful. The patient was still taking salicylates. He felt "washed out" and was easily fatigued on the slightest exertion. At this period an early aortic diastolic murmur appeared. The sedimentation rate remained normal, being 5 and 6 mm. per hour on subsequent determinations. The diastolic murmur persisted, and shortly thereafter the patient was transferred to a convalescent hospital.

Case 3 illustrates (1) monarticular involvement; (2) rapidity of recurrence with premature physical activity; (3) the need for clinical as well as laboratory study, since electrocardiographic tracings were normal and yet a diastolic murmur developed while the patient was under observation, and (4) the presence of rheumatic activity despite a normal blood sedimentation rate.

VI. *Absence of Fever During the Acute Stage.*—Fever is almost invariably present in the acute rheumatic state, but we have observed several cases in which temperatures were never elevated during the period of observation. It is of course possible that fever had been present prior to hospitalization. As a general rule, fever subsided promptly (within four or five days) on full doses of salicylates and rest in bed, but it is not likely to do so while the patient is ambulatory.

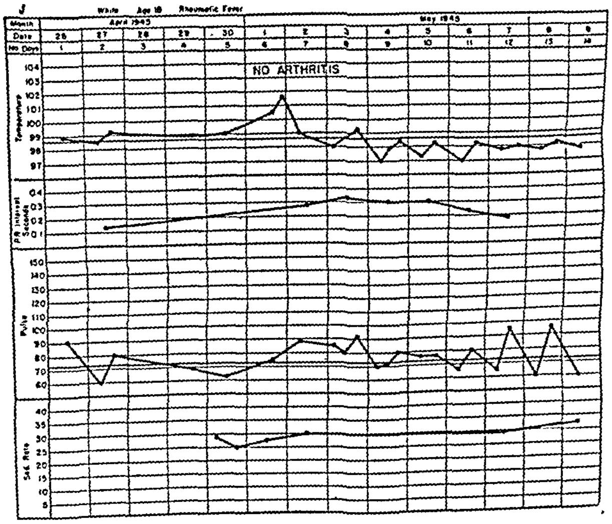

Fig. 3.—Subclinical polycyclic episode. The patient was unaware of fever.

VII. *Atypical Febrile Course in the Observative State.*—Rheumatic fever is not often considered in the differential diagnosis of pyrexia of unknown origin, and it is uncommon for fever to persist as the sole clinical evidence of rheumatic activity. Characteristic temperature charts in rheumatic fever are illustrated in figures 2 and 3. The fever when present is often remittent, and the daily swings usually vary between 1 and 3 F. Wide swings usually indicate the presence of some other disease. A few cases of chronic active rheumatic fever may show a low grade rise of temperature for weeks, and subclinical reactivations may cause secondary fever of short duration (fig. 3), but the fever of the acute phase subsides rapidly. When fever was high or prolonged in our cases pericarditis was usually present (figs. 4 and 5, see also case 7).

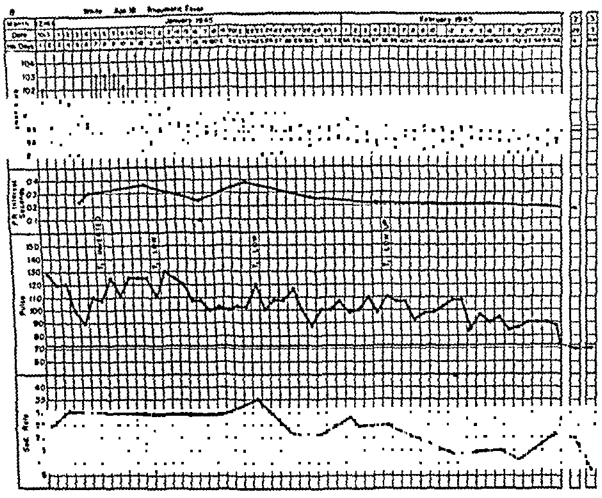

Fig. 4.—Course of rheumatic fever with acute pericarditis.

Case 4 illustrates the difficulty of diagnosis when articular symptoms are late in appearing and the febrile course is atypical.

Case 4.—A Negro man aged 19 was admitted to a naval hospital on April 12, 1945. He first had become sick aboard ship on March 2, with headache and a temperature of 103 F. No abnormalities were found on examination, and he had no localizing symptoms. He was given sulfadiazine and penicillin, but the fever persisted. The blood count, urinalysis, blood serum agglutinations and stool cultures were normal. On March 7, five days later, he complained of severe pain in his groins on weight bearing, with tenderness along his adductor muscles. On March 10 his temperature was still variable, between 100 and 102 F., and pain and swelling developed in the metacarpophalangeal joint of the middle finger of the right hand. The pain in his groin, which was presumably due to involvement of his hip joints, had disappeared. The sedimentation rate was 26 mm. in one hour. On March 20, eighteen days after the onset of his fever, he noted redness, swelling and pain in the right wrist. The left wrist, both elbows and the knees were sore but not swollen. The diagnosis of rheumatic fever was made, salicylate therapy was begun and he was transferred to the United States.

On arrival the patient had taken no salicylates for six days. The pains in his joints, which had rapidly subsided with full doses of salicylates, had partially recurred, and he complained of aching and stiffness in his right wrist and elbow. On examination he was afebrile. Examination of the heart gave negative results. The sedimentation rate was 25 mm. in one hour. The electrocardiogram revealed a sinus tachycardia of 126 per minute and a PR interval of 0.22 second. The T waves in leads 1, 2 and 4 were low or diphasic.

The patient was put to bed and given 10 Gm. of salicylates daily. His symptoms cleared rapidly and completely. Sedimentation rates taken twice weekly fell rapidly to normal, the figures being 25, 19, 26, 17, 15, 9, 9 and 7 mm. in one hour on May 8, 1945, less than a month after admission. Another electrocardiogram taken on April 26, two weeks after entry, revealed a PR interval of 0.17 second with a cardiac rate of 90; the T waves in leads 1, 2 and 4 were taller than before but still abnormal. On May 3, three weeks after entry, the PR was 0.16 second and the T waves were normally upright. The patient was allowed up on May 10, 1945 and had no recurrence of symptoms or signs of activity of rheumatic fever.

Case 4 illustrates the diagnostic problem of fever without localizing symptoms which would point to rheumatic fever. The first pain in the joints occurred five days after the onset of fever, but the pain in the groin was not recognized as being related to the involvement of joints. A single finger joint then was involved a few days later, but this symptom subsided quickly. It was not until eighteen days after the onset of the fever that polyarthritis developed and clarified the diagnosis. Electrocardiographic studies might have permitted an earlier recognition of the disease.

VIII. *Association of Rheumatic Fever and Marie-Strümpell Spondylitis.*—It is believed by some observers that Marie-Strümpell spondylitis is a variety of rheumatoid arthritis although a distinct and separate disease. The exact relationship between rheumatoid arthritis and rheumatic fever is not clearly established, and renewed interest has been shown recently in the cardiac observations in the first-named condition. When one sees patients in whom both diseases are present, the concurrence emphasizes the entire problem. We have observed 6 such cases, of which the following is an example.

Case 5.—A man aged 19 had pain in both feet, ankles and the lower part of the back on Oct. 5, 1945. On salicylate therapy, the ankles improved but his back and feet remained painful. Progressive involvement, despite salicylate therapy, appeared in the knees, shoulder and hips, and these joints were still painful at the time of his arrival at a naval hospital on Nov. 30, 1945. He had lost 15 pounds (6.8 Kg.) and had considerable stiffness of the neck and back in addition to the pain in his peripheral joints.

Examination revealed decided limitation of motion and spasm of muscles in the lower part of the back. The heart was not enlarged, but there was a moderately loud, low-pitched mid-diastolic murmur at the apex. There was also an apical systolic murmur, grade 2. No definite aortic valvular murmurs were heard. To judge from the patient's health record, these murmurs had not previously been present. The sedimentation rate was 27 mm. in one hour. The electrocardiogram was normal. Roentgenographic examination of the sacroiliac joints revealed changes characteristic of spondylitis (fig. 6).

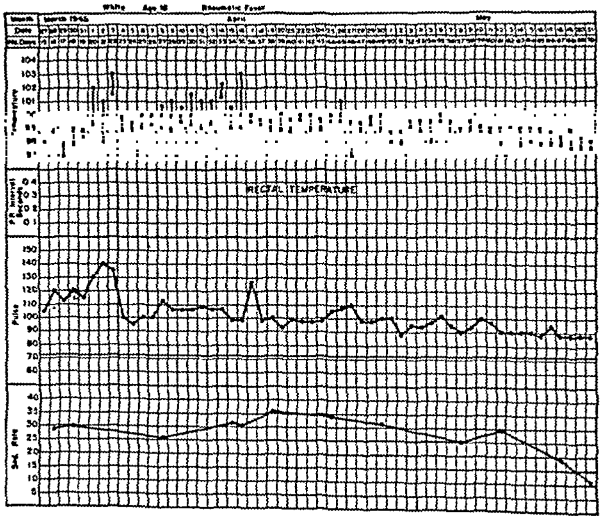

Fig. 5.—Course of rheumatic fever with acute pericarditis.

Despite large doses of salicylates, the patient continued to have an elevated sedimentation rate and pains and stiffness in the neck, back, hips and feet, while the electrocardiogram remained normal over a *four months period* of observation.

The expansion of the chest decreased over a six months period from 2½ inches (6.4 cm.) to 1 inch (2.5 cm.). On Dec. 13, 1945 an early aortic diastolic murmur was heard for the first time, to the left of the sternum in the third interspace. This murmur was transient, and on March 16, 1946 only the mid-diastolic apical rumble was heard.

Case 5 is a rare and interesting example of the coexistence of salicylate-resistant chronic arthritis, of spondylitis proved by the well known roentgenographic findings and of mitral valvulitis and transient aortic insufficiency. This case was the only one observed in which active rheumatoid arthritis and spondylitis coexisted with active carditis and valvulitis and changing murmurs.

IX. *Abdominal and Precordial Pain as the Initial Manifestation.*—Abdominal and precordial pain has frequently been said to dominate the clinical picture in some children with rheumatic fever. In adults, however, these symptoms are usually not prominent and are difficult to evaluate when present. Precordial pain was more commonly present than was abdominal pain in our cases but rarely appeared as the sole symptom. One patient, subsequently shown to have rheumatic fever, had three distinct episodes of abdominal pain and fever of forty-eight hours' duration over a seven week period before typical polyarthritis and carditis appeared.

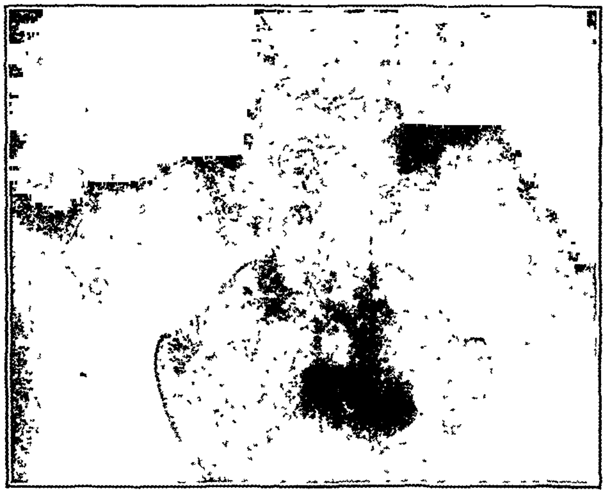

Fig. 6 (case 5).—Sacroiliac arthritis in a patient with rheumatic fever.

X. *Onset with Pericarditis and Pneumonitis.*—While rheumatic fever is classically associated with the development of pancarditis, pericarditis is usually not clinically recognizable in most cases, the arthritis and myocardial involvement being most prominent. However, occasionally pericarditis is the dominant clinical feature. Rheumatic pneumonitis has been discussed by recent authors and experience in the armed services has indicated that it is more frequent than formerly was thought. Griffith[4] stated that pneumonitis occurred in 12 per cent of his cases. We believe this figure to be rather high, 2 per cent being about the incidence among the patients observed by us.

Case 6.—A married woman aged 29 entered a naval hospital on July 20, 1944, complaining of chills and fever, of pain in the right upper portion of the thorax on breathing and of vomiting of forty-eight hours' duration. Her past history was uneventful. Examination revealed a temperature of 101.8 F., a pulse rate of 118, and a respiratory rate of 24. The pertinent observations were moderate inflammation of the pharynx, slight generalized tenderness over the abdomen and decreased breath sounds over the right anterior portion of the thorax with a friction rub over the same area. The laboratory data revealed normal urine, a leukocyte count of 21,650 per cubic millimeter of blood, with 72 per cent polymorphonuclear cells, a hemoglobin content of 12 Gm. per hundred cubic centimeters of blood and an erythrocyte count of 4,000,000 per cubic millimeter of blood. The diagnosis on admission was pneumonia and pleurisy. On the second day in the hospital the patient complained of pain across the upper part of the thorax; the fever was unchanged in spite of full doses of sulfadiazine. Roentgenologic examination of the thorax revealed a widened cardiac silhouette with bilateral pleural effusion. Five days after entry, examination revealed muffled heart sounds and a definite pericardial friction rub. Detailed questioning elicited the fact that for several days she had had migratory aching pain in several joints. She did not spontaneously mention these pains.

Therapy with sodium salicylate was begun on July 25. The pericardial friction rub persisted until August 3; the fever rapidly decreased, and by August 7 the temperature was normal. The pleural effusion and pneumonitis rapidly cleared, and the roentgenologic examination of her thorax gave negative results on August 4, except for the enlarged heart shadow. A transient apical systolic murmur, grade 2, became audible in the second week.

An electrocardiogram on July 25 revealed inverted T waves in all leads. These had become normal by August 29. The auriculoventricular conduction time was consistently normal. The sedimentation rate, which was 25 mm. in one hour on entry, persisted at the level of 25 to 35 mm. and slowly diminished until August 29, when it was 7 mm. The patient was then sent home for further convalescence. She was seen again on September 20, when she complained of tightness in her thorax. The electrocardiogram was normal, but the sedimentation rate had increased to 13 mm. in one hour. The heart was normal except for moderate enlargement. She was seen again on Oct. 23, 1944, at which time she made no complaints. Roentgenologic examination showed that the heart and the lungs were essentially normal. The electrocardiogram was normal and the sedimentation rate was 15 mm. in one hour.

Case 6 illustrates the onset of rheumatic fever with pleurisy, pneumonia and pericarditis. Articular findings were absent, and a history of articular pain was elicited only on questioning. The cardiac enlargement and pericardial friction rub provided the evidence which led to the final diagnosis.

Case 7.—A man aged 20 was admitted to the hospital on June 29, 1945 for a submucous resection of the nasal septum. Four days after surgical intervention he had symptoms and signs of acute tonsillitis and sinusitis with a temperature of 103 F. He responded promptly to treatment and was returned to duty. Over the next few days there developed feverishness and substernal pain brought on by leaning forward. On July 16, 1945 the patient was readmitted to the hospital, where physical examination revealed an acutely ill man with fever, tachycardia, pharyngitis and distended cervical veins. The heart was enlarged, and a diastolic gallop and a precordial friction rub were heard. The blood pressure was 114 mm. of mercury systolic and 76 diastolic. Urinalysis was negative. The leukocytes numbered 12,000 per cubic millimeter of blood with 80 per cent polymorphonuclear cells. The sedimentation rate was 25 mm. in one hour. The venous pressure taken in the cubital vein was 20 cm. of water. The throat culture revealed many hemolytic streptococci. The electrocardiogram showed a PR interval of 0.26 second, elevated ST segments in leads 1, 2 and 4, a low T wave in lead 1 and diphasic T waves in leads 2 and 3. The blood culture was negative.

The patient was placed in an oxygen tent and given full doses of salicylates and large doses of penicillin (40,000 units every two hours intramuscularly). His condition continued to be critical for a week. The precordial friction rub was heard daily until July 26. The venous pressure varied between 16 and 20 cm. of water. Roentgenographic examination of the thorax on July 22, 1945 revealed an "enlarged and bulging cardiac silhouette" (fig. 7). The T waves in leads 1, 2 and 4 became inverted; the auriculoventricular block and inverted T waves persisted, and an intraventricular block appeared. At no time did the patient have subjective or objective manifestations of articular involvement. On July 29 an aortic diastolic murmur was heard and a pleural rub appeared in the left axilla, associated with pain on cough and deep respiration. This persisted for several days and gradually subsided. On August 13 pain without visible swelling appeared in the knees and elbows. This persisted for only four days. The improvement of the patient continued progressively, and by August 28 the auriculoventricular conduction had returned to normal although the T waves were still inverted. The sedimentation rate was 18 mm. per hour at this time. The aortic diastolic murmur persisted, but the cardiac shadow gradually decreased in size. The electrocardiogram became normal on September 21, approximately two months after admission. On October 12 the sedimentation rate was 12 mm. in one hour. On November 1 when the patient was transferred to a convalescent hospital roentgenographic examination of the thorax showed slightly generalized cardiac enlargement with normal pulmonary fields. The aortic diastolic murmur was still present.

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[4] Griffith, G. C.: Rheumatic Fever: Its Recognition, California & West. Med. 63: 119-123 (Sept.) 1945.

This most instructive case illustrates the onset of rheumatic fever with pericarditis and pneumonitis. The late transient arthralgia, the persistent aortic diastolic murmur and the classic conduction defects and changes in the T waves confirmed the diagnosis.

XI. *Subclinical Recrudescence.*—The initial diagnosis of rheumatic fever is no more important than the recognition of recrudescence of activity in patients during convalescence or during an inactive period. The cases reported in this paper have illustrated that the rheumatic state manifests itself in different patients in different ways. Fever, elevation of the sedimentation rate, the appearance or reappearance of abnormal electrocardiographic tracings and articular symptoms or signs, all may be present singly or in combination—either in the initial attack or in the recrudescence. In order to observe the earliest evidence of recrudescence it is important to search for all these abnormalities when a patient is first allowed to resume physical activity. No patient should be allowed more than the slightest exertion until all signs of activity (fever, elevated sedimentation rate, pains of joints, rash, nodules, electrocardiographic changes and so forth) have subsided or until further observation reveals that the residual symptoms and signs are nonspecific.

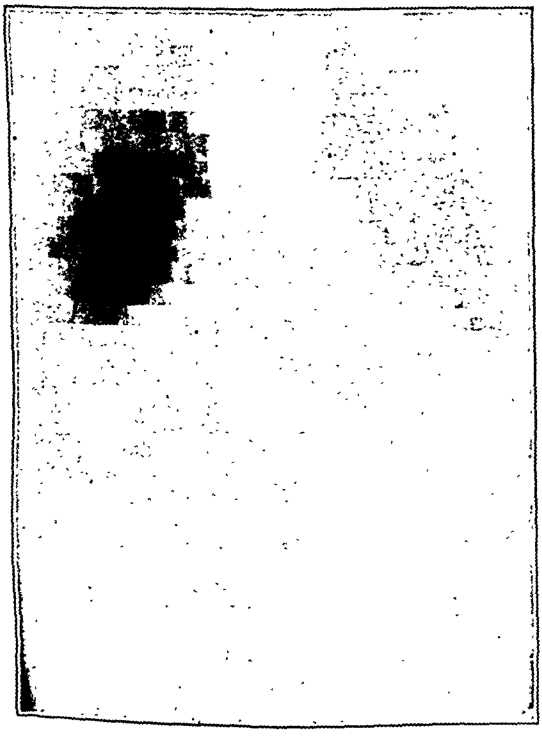

Fig. 7 (case 7).—Cardiac kymogram showing an enlarged and bulging cardiac silhouette and absent cardiac pulsations, typical of acute pericarditis.

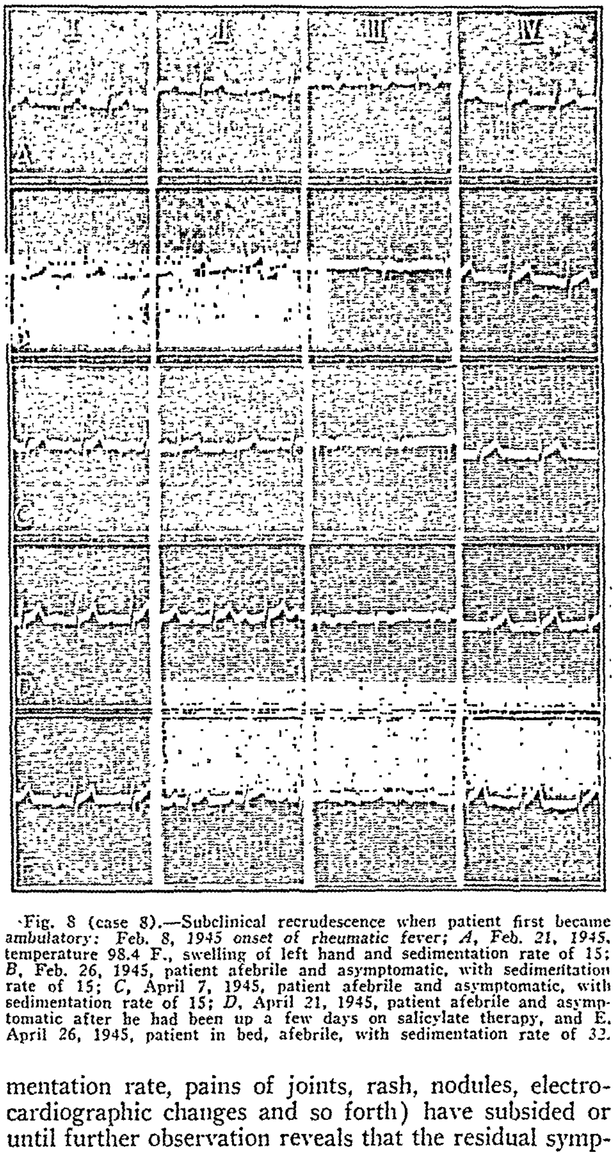

Fig. 8 (case 8).—Subclinical recrudescence when patient first became ambulatory: Feb. 8, 1945 *onset of rheumatic fever; A,* Feb. 21, 1945, temperature 98.4 F., swelling of left hand and sedimentation rate of 15; *B,* Feb. 26, 1945, patient afebrile and asymptomatic, with sedimentation rate of 15; *C,* April 7, 1945, patient afebrile and asymptomatic, with sedimentation rate of 15; *D,* April 21, 1945, patient afebrile and asymptomatic after he had been up a few days on salicylate therapy, and *E,* April 26, 1945, patient in bed, afebrile, with sedimentation rate of 32.

CASE 8.—A man aged 18 had arrived on the west coast on Jan. 16, 1945. A cold had developed on his arrival. He stood watches in the rain and noticed pain in the heels while walking. This pain increased, and a week later he was examined but no abnormalities were noted. He was returned to duty, and on February 8 pain and numbness developed in his right hand. On examination his hand was found to be swollen. He was referred to a naval hospital on February 11.

On arrival it was further elicited that the patient had had occasional aching in his knees and shoulders during the previous ten days, but that pains in his heels and his right hand were most disturbing. He had had scarlet fever in childhood and mastoiditis in 1941.

Examination revealed pain and slight swelling and tenderness of the right metacarpophalangeal joints. The temperature was 98.4 F., the pulse rate was 80, the blood pressure was 132 mm. of mercury systolic and 84 diastolic. The heart was normal, there were no nodules and no rash was present.

The patient was put to bed and given full doses of salicylates. He was afebrile throughout. On February 13, within forty-eight hours of entry, the swelling and most of the tenderness of the right hand had disappeared. A soft apical systolic murmur developed, and the heart sounds were muffled. The prothrombin time, after two months of daily administration of salicylates, was 89 per cent of normal. His only complaint throughout his illness, after the first forty-eight hours, was weakness.

On April 10, after nearly two months of rest in bed and salicylates, the patient was allowed to get up. His sedimentation rate at that time was 10 mm. in one hour and his electrocardiogram was normal. The administration of salicylates was continued, and he was kept under careful observation. By April 19, his sedimentation rate had risen to 21 mm. in one hour and his PR interval had increased to 0.32 second (fig. 8). He had no fever or joint symptoms and was completely unaware of the flare-up. He was returned to bed, and after five days his partial heart block had disappeared, while his sedimentation rate fell to 9 mm. in one hour within ten days. He remained in bed until the last of May and was then allowed up without further incident.

The flare-up of symptoms after the patient had been allowed to get up stresses the necessity of a careful clinical and laboratory control when the patient first becomes ambulatory. The short duration of the abnormalities of the sedimentation rate and electrocardiogram during the flare-up is noteworthy. The fact that when the disease finally was quiescent the sedimentation rate was 5 mm. in one hour suggests that even when an apparently normal sedimentation rate of 10 or 12 mm. per hour is found the patient should be further observed to see that the lowest level is reached before he is allowed up.

COMMENT

The most important fact noted from a study of our cases is that rheumatic fever may manifest itself and run a clinical course in ways not commonly recognized. Failure to regain complete health or the appearance of symptoms within six weeks of a hemolytic streptococcic infection may indicate the development of rheumatic fever. In our experience, the most valuable criteria for the diagnosis of rheumatic fever in such atypical cases are: (1) arthralgia, (2) evidences of carditis, especially abnormalities in the electrocardiogram, (3) fever and (4) persistent elevation of the sedimentation rate. If evidence suggesting the possibility of rheumatic fever presents itself, one should review the history carefully for pains of joints, dyspnea, palpitation and abdominal or precordial pain; careful, frequently repeated examinations of the heart for significant murmurs, friction rub, diastolic gallop or enlargement should be made, and examination for nodules or cutaneous eruptions should be carried out. Repeated determinations of sedimentation rates and electrocardiograms must be performed to enable one to interpret the significance of any illness during this period. Arthralgia, however mild, occurring after an infection of the upper part of the respiratory tract must be investigated with some thoroughness. Almost all patients subsequently shown to have rheumatic fever had an elevation in the blood sedimentation rates at the time the arthralgia was present. This point may help to separate the arthralgias due to rheumatic fever from those due to other causes. Furthermore, the cases of rheumatic fever in which arthralgia occurred without visible signs of arthritis showed a rapid and complete subsidence of the articular symptoms following rest in bed and salicylate therapy. Additional joints may become involved in the chronic active rheumatic fever group, but the picture of persistent arthralgia of a single joint or set of joints was not that seen in our cases of rheumatic fever.

Postscarlatinal nonsuppurative arthritis must be considered to be identical with rheumatic fever, and the more carefully such patients are studied the more frequently will clinical and electrocardiographic evidences of carditis be found which are indistinguishable from those observed in rheumatic fever.

It is apparent from the foregoing reports of cases that the classic clinical picture of rheumatic fever in young adults is often absent and the diagnosis can be made only after a correlation of all the available data. In all the cases that we have reported, carditis as manifested either by electrocardiographic abnormalities or by transient signific [illegible], or by both, was present at some stage of the disease, thus confirming the diagnosis. Many similar instances could have been presented, however, in which carditis did not develop but which were nevertheless probably cases of rheumatic fever. Carditis may not be demonstrated in certain patients with rheumatic fever because electrocardiographic abnormalities may be extremely transient or absent, even if early serial records are made. Further, carditis may be absent in some cases of rheumatic fever.[5] The usual clinical signs of carditis were somewhat infrequent in our group of cases. Diastolic gallop, diastolic murmurs and cardiac enlargement were occasionally noted but occurred in only a modest percentage of cases. Cardiac failure was rare. A systolic murmur may appear in any febrile illness and, with the exception of certain long, loud murmurs, is not sufficient clinical proof of active endocarditis. One must rely, therefore, on abnormalities in the electrocardiogram as the most common and useful confirmatory evidence of the presence of myocarditis in the rheumatic fever of young adults.

Response to salicylates in our cases was usually striking, but this has not been considered a reliable criterion for diagnosis because other types of arthritic pain may similarly be relieved by large doses of salicylates.

SUMMARY

1. Observation of a large number of young adults with rheumatic fever indicates clearly that rheumatic fever often manifests itself with atypical clinical features and clinical course.

2. Of the clinical features, the most striking have been: minimal or complete absence of articular symptoms, monarticular involvement, onset with major manifestations in the hands and feet, prodromal aching for days to weeks prior to the onset of acute arthritis, recurrent acute arthritis of short duration with apparently complete subsidence between attacks, absence of fever during the acute stage, onset with fever of obscure origin, association of rheumatic fever and Marie-Strümpell spondylitis, onset with pericarditis and pneumonitis and subclinical recrudescence.

3. The most valuable common criteria for the diagnosis of rheumatic fever in young adults have been (1) arthralgia, (2) evidences of carditis, especially abnormalities in the electrocardiogram, (3) fever and (4) persistent elevation of the sedimentation rate. Other major and minor manifestations of rheumatic fever, such as chorea, nodules, cardiac enlargement, cardiac failure, pericarditis, diastolic and significant systolic murmurs, abdominal and precordial pain, erythema marginatum, epistaxis and pulmonary changes, are much less common.

4. The diagnosis of carditis, the most important major manifestation, has depended largely on significant transient electrocardiographic changes, particularly partial auriculoventricular block and inverted T waves in

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[5] Parkinson, J.: Rheumatic Fever and Heart Disease, Lancet 2: 657-662 (Nov. 24) 1945.

leads 1, 2 or 4, alone or in combination. Other objective evidences of carditis have been less frequently observed.

5. Continued fatigability, failure to convalesce completely, the continuance or reappearance of low grade fever or the development of arthralgia, however variable and mild, in the weeks following a hemolytic streptococcic respiratory infection, should lead one to suspect the possibility of rheumatic fever. If a patient exhibits these clinical manifestations an appropriate clinical and laboratory investigation should be carried out.

PARA-AMINOBENZOIC ACID THERAPY OF ROCKY MOUNTAIN SPOTTED FEVER

Outline of a Comprehensive Plan of Treatment With Report of Five Cases

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The name Rocky Mountain spotted fever is now obviously geographically incorrect, since this disease has been found in forty-seven of the forty-eight states. Ten years ago 70 per cent of the cases occurred in the Mountain and Pacific states, while in 1945 87 per cent were reported from the Central and Eastern states. Its incidence and importance to public health in the United States are shown by the occurrence of 400 to 560 cases with 90 to 137 deaths each year during the past decade. Formerly it was believed that the eastern variety of Rocky Mountain spotted fever was mild, but in 1944 the mortality in 61 cases from the Rocky Moutain states was 32 per cent and in 241 cases from the South Atlantic states, 25 per cent.

Because of the tremendous area over which the cases occur it is probable that few physicians are afforded the opportunity to treat many patients with Rocky Mountain spotted fever and thus to develop an adequate concept of its management. As a corollary, the treatment of this formidable disease may often be haphazard and unsystematic. This probability is suggested by the occurrence of 20 deaths from Rocky Mountain spotted fever scattered over 16 different counties of Virginia in 1945 and 11 deaths in 11 counties of North Carolina during 1946. The need for a systematic, comprehensive plan of treatment applicable to every case is obvious. Such a plan is presented in this paper.

In the early days the treatment of this disease was symptomatic, which simply enabled the patient to die or recover somewhat more comfortably. Unfortunately, the pathologic changes in the vascular system were so striking and so emphasized in pioneer studies that the dictum was laid down that the parenteral administration of fluids was hazardous. As recently as 1943 Topping[1] wrote ". . . an occasional patient will require an additional amount (of fluids) parenterally. This had perhaps better be given by hypodermoclysis rather than intravenously, as there is some clinical evidence that any intravenous therapy is contraindicated." Martin[2] concluded that "blood transfusions probably also are contraindicated because of the endarteritis. . . . However, if the anemia becomes marked, transfusions may be necessary."

For years some physicians who were forced to battle with this fearful disease each summer were accustomed to administer intravenous fluids and blood transfusions with great freedom and apparently with considerable success. The rationale of these measures was arrived at empirically and as a result of long experience. It seemed that these patients should be, and were, benefited by measures calculated to prevent and overcome the phenomena of dehydration, depletion, anemia and metabolic starvation, which appeared so regularly in this severe disease. Such clinical "battles" sometimes were waged for a month or more, and many desperately ill patients recovered, but the mortality over a period of years averaged about 25 per cent.

It was not until 1944 that the careful studies of Harrell, Venning and Wolff[3] revealed the pathologic physiology of Rocky Mountain spotted fever and explained why properly chosen intravenous supportive therapy was so beneficial. They showed that because of the widespread vascular lesions plus starvation there was a tremendous loss of circulating body fluids and protein, with lowering of the blood chlorides, elevation of the nonprotein nitrogen of the blood and potential or actual development of peripheral circulatory collapse. They suggested that supportive therapy should include adequate amounts of plasma and whole blood in addition to dextrose, salts, vitamins and amino acids and should be controlled by careful laboratory studies. Furthermore, they pointed out that because of the intranuclear location of rickettsias in this disease any therapeutic agent must pass through two cell membranes in order to reach the organisms. This explains, in the opinion of these authors, why Topping's immune rabbit serum[1] appears to be effective only in the first three days of the rash—before many parasites have become established in cells.

The sulfonamide compounds are not only useless but probably harmful in the treatment of this disease. Experimentally, sulfonamide-treated guinea pigs died sooner than the untreated controls.[4] Since the sulfonamide drugs and para-aminobenzoic acid are antagonistic in action, use of the former is contraindicated in patients treated with the latter.

Although rickettsias are reported to be sensitive to penicillin, this agent has proved useless in the treatment of Rocky Mountain spotted fever.

The experimental and clinical background for the use of para-aminobenzoic acid in the treatment of spotted fever dates from 1942. Snyder, Maier and Anderson[5] showed that its oral administration would reduce the mortality of experimental murine typhus in white mice, while Hamilton, Plotz and Smadel[6] found that it would inhibit the growth of both epidemic and murine typhus rickettsias in chick embryos. These investigators and others[7] considered that para-amino-

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From the pediatric service of St. Leo's Hospital and the Sternberger Children's Hospital.

[1] Topping, N. H.: Rocky Mountain Spotted Fever, M. Clin. North America **27**: 722-733 (May) 1943.

[2] Martin, D. W.: Rocky Mountain Spotted Fever in Children, J. Pediat. **16**: 468-472 (April) 1940.

[3] Harrell, G. T.; Venning, W., and Wolff, W. A.: The Treatment of Rocky Mountain Spotted Fever, J. A. M. A. **126**: 929-934 (Dec. 9) 1944.

[4] Topping, N. H.: Experimental Rocky Mountain Spotted Fever and Endemic Typhus Treated with Prontosil or Sulfapyridine, Pub. Health Rep. **54**: 1143-1147 (June 30) 1939.

[5] Snyder, J. C.; Maier, J., and Anderson, C. R.: Report to the Division of Medical Sciences, National Research Council, Dec. 26, 1942.

[6] Hamilton, H. L.; Plotz, H., and Smadel, J. E.: Report to the Director of the United States of America Typhus Commission, Dec. 16, 1943.

[7] (*a*) Murray, E. S.; Zarafonetis, C. J. D., and Snyder, J. C.: Further Report of Effect of Para-Aminobenzoic Acid in Experimental Tsutsugamushi Disease, Proc. Soc. Exper. Biol. & Med. **60**: 115-117 (Oct.) 1945. (*b*) Z[illegible] r, J. C., and Murray, E. S.: Immunity [illegible] cid Therapy in Experimental Tsutsugam[illegible] 61 [illegible] (March) 1946.

benzoic acid interferes in some way with the proliferation of the rickettsial organisms within tissue cells—probably by increasing cellular metabolism. This inhibits the infecting organisms sufficiently to permit the development of a lasting immunity. This hypothesis also explains why para-aminobenzoic acid may be therapeutically effective even late in the course of Rocky Mountain spotted fever, when rickettsias have become not only intracellular but also intranuclear.

Yeomans, Snyder, Murray, Zarafonetis and Ecke [8] treated 20 cases of louse-borne human typhus with para-aminobenzoic acid, with 44 untreated patients as controls. They believed that the course of the disease was favorably modified if the patient was treated in the first week of illness. (In the light of present knowledge both the dosage and the concentration of the drug in the blood were probably too low.)

Anigstein and Bader [9] found para-aminobenzoic acid effective therapeutically in guinea pigs infected with Rocky Mountain spotted fever rickettsias. All the control animals died, while those fed 2 per cent para-aminobenzoic acid in the diet either escaped infection or recovered from it. Hamilton [10] reported that para-aminobenzoic acid inhibits the growth of spotted fever rickettsias in chick embryos to an even greater extent than it does the growth of typhus rickettsias. Rose, Duane and Fischel [11] treated a 46 year old woman suffering from moderately severe spotted fever with para-aminobenzoic acid. She recovered with great rapidity. Maroney and Davis [12] reported the dramatic recovery of a 3 year old child in whose case treatment with para-aminobenzoic acid was begun on the twelfth day of severe spotted fever.

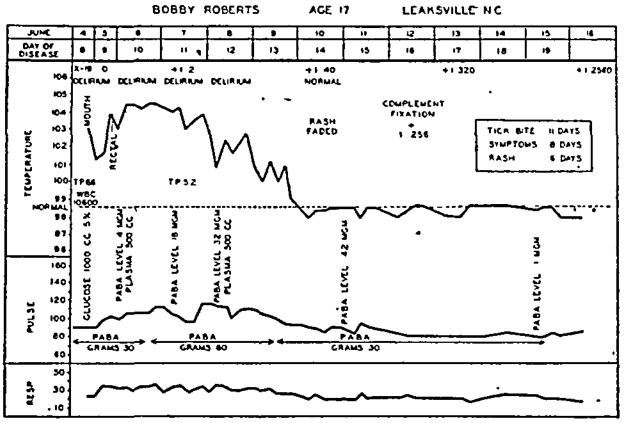

Chart 1 (case 1).—Para-aminobenzoic acid (PABA) therapy in severe case of Rocky Mountain spotted fever.

Murray, Zarafonetis and Snyder [7a] found that para-aminobenzoic acid protected 100 per cent of gerbils (small South African rodents) from multilethal doses of Rickettsia orientalis, the causative organism of tsugamushi disease (scrub typhus). Tierney [13] treated 18 cases of severe human tsutsugamushi disease with large doses of para-aminobenzoic acid. Blood levels of 30 to 60 mg. per hundred cubic centimeters were maintained. He concluded that para-aminobenzoic acid is an effective therapeutic agent in this disease.

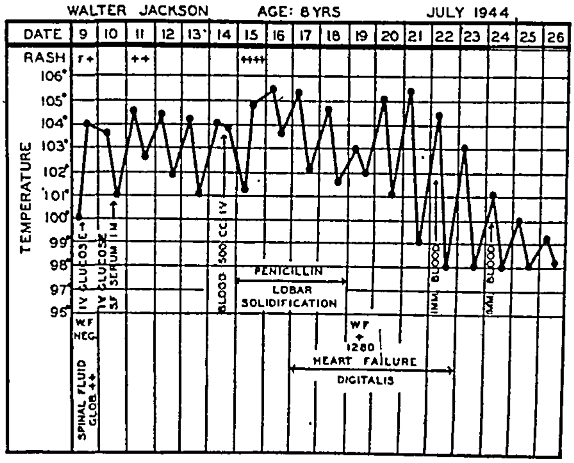

Chart 2 (W. J.).—Moderately severe case of Rocky Mountain spotted fever in 8 year old boy; treatment prior to para-aminobenzoic acid.

Smith [14] reported 29 patients with endemic typhus treated with moderate doses of para-aminobenzoic acid. In his opinion they recovered more rapidly than untreated control cases. (It is probable that better results would have been achieved with larger doses of the drug.)

REPORT OF CASES

Case 1.—*History.*—B. R., a white boy aged 17, entered St. Leo's Hospital June 4, 1946 with a history of tick bite, headache and malaise for eight days, fever and chills for seven days, rash for six days and delirium for two days before admission.

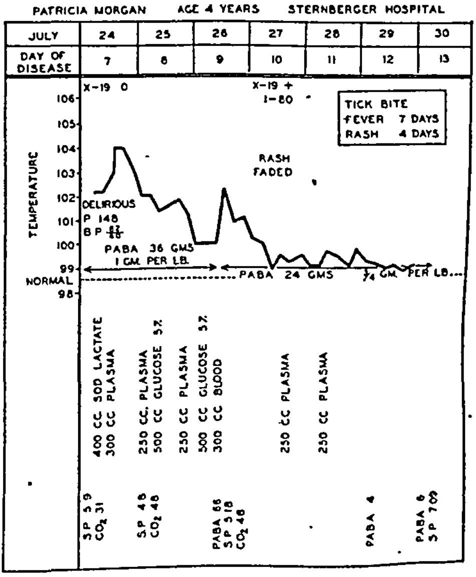

Chart 3 (case 2).—Para-aminobenzoic acid therapy in severe case of Rocky Mountain spotted fever.

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13. Tierney, N. A.: Effect of Para-Aminobenzoic Acid in Tsutsugamushi Disease, J. A. M. A. **131:** 280-285 (May 25) 1946.

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Physical Examination.—Examination revealed a delirious, dehydrated boy with the classic hemorrhagic rash of Rocky Mountain spotted fever, conjunctivitis, palatal enanthem and slight scrotal edema. The serum protein concentration was 6.6 Gm. per hundred cubic centimeters.

Treatment.—An adequate fluid intake was maintained by the oral route supplemented by intravenous injections. Vitamin B complex and ascorbic acid were given intramuscularly. Four grams of sodium chloride were included in the daily diet. Plasma and blood were given on several occasions. Para-aminobenzoic acid (PABA), 2.5 Gm. in 25 cc. of a 5 per cent solution of sodium bicarbonate was given by mouth every two hours for the first two days. The blood concentration of para-aminobenzoic acid was only 4 mg. per hundred cubic centimeters at the end of this time. Accordingly, the dosage was increased to 5 Gm. every two hours in 50 cc. of a solution of sodium bicarbonate. In twenty-four hours the blood level was 18 mg., and a day later 32 mg., per hundred cubic centimeters. The temperature dropped sharply on the fifth day, reached normal on the sixth day and remained there. The rash faded with great rapidity on the sixth day, the sensorium cleared overnight and the boy was practically well. The Weil-Felix agglutination test with Proteus OX 19 was positive in a dilution of 1:2,560 on June 16, and the complement fixation reaction was positive for Rocky Mountain spotted fever in a dilution of 1:256 on June 12.

In comparison with experience with Rocky Mountain spotted fever in the past, this was a brilliant therapeutic result in a rather severe case. Ordinarily this boy might have been expected to be extremely sick for two to three weeks. The course of extremely severe and moderately severe cases treated prior to para-aminobenzoic acid therapy are shown in charts 2 and 4.

CASE 2.—*History.*—P. M.,[15] a white girl aged 4, was admitted to the Sternberger Children's Hospital July 24, 1946 with a history of tick bite, high fever and chills for seven days and rash and delirium for four days.

Physical Examination.—The child appeared to be extremely ill; she was delirious, dehydrated and incoordinate; she breathed rapidly and deeply. The pulse rate was 148 and blood pressure 82 systolic and 60 diastolic. There was a generalized hemorrhagic macular rash, which was most intense on the face, buttocks and extremities, and a palatal enanthem. The spinal fluid was normal chemically and cytologically. The carbon dioxide combining power of the blood was 32 volumes per cent, the serum protein level was 5.9 Gm. per hundred cubic centimeters and the Widal reaction and agglutination against Proteus OX 19 were negative.

Treatment.—Dehydration and acidosis were rapidly overcome with the administration of sixth-molar sodium lactate and dextrose in lactate-Ringer's (Hartman's) solution parenterally. She was given 3 Gm. of para-aminobenzoic acid every two hours by mouth (1 Gm. per pound [0.5 Kg.] of body weight per twenty-four hours) and adrenal cortical extract, vitamin B complex, ascorbic acid and vitamin K parenterally. Plasma and blood were administered at appropriate intervals. Defervescence began the third day and was complete on the fourth. The rash faded with great rapidity after the fourth day, in striking contrast to its usual course in severe Rocky Mountain spotted fever. Ordinarily in this condition the rash becomes progressively more intense, widespread and hemorrhagic for at least two weeks.

This also may be described as a brilliant therapeutic triumph in an exceedingly ill child whose febrile fastigium in the pre-para-aminobenzoic acid era would probably have exceeded two weeks in duration. It is worthy of note that this patient was already in acidosis on admission and that without adequate laboratory control this factor alone might have become extremely serious. The blood level of para-aminobenzoic acid was 66 mg. on the third day and 54 mg. per hundred cubic centimeter on the fourth day after the dose had been decreased to 2 Gm. every two hours.

CASE 3.—*History.*—F. W., a white girl aged 10, entered the Sternberger Children's Hospital Aug. 10, 1946 with a history of tick bite two weeks before, headache, chills, high fever and backache for seven days and rash and inconstant delirium for five days before admission.

Physical Examination.—Positive observations on physical examination were: dehydration; the typical hemorrhagic rash of Rocky Mountain spotted fever, involving the entire body but with maximum intensity on the extremities; conjunctivitis; strawberry tongue; moderate edema; positive Brudzinski and Kernig's signs, and a rapid pulse. The spinal fluid yielded normal cytologic and chemical findings, and urinalysis and the blood count were also negative, as was agglutination against Proteus OX 19. The serum protein level was 5.76 Gm. per hundred cubic centimeters.

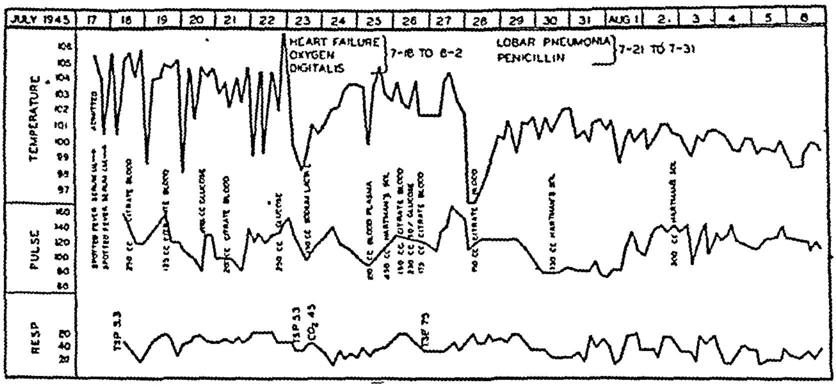

Chart 4 (R. L. P.).—Extremely severe case of Rocky Mountain spotted fever in 1 year old boy, treatment prior to para-aminobenzoic acid.

Treatment.—Intravenous dextrose in lactate-Ringer's solution and plasma were given in adequate amounts, and a high intake of vitamins A and B complex, ascorbic acid and vitamins D and K was maintained. Six grams of para-aminobenzoic acid was given on admission, and then 3 Gm. was given every two hours, with 10 cc. of a chilled solution of 5 per cent sodium bicarbonate per gram. The carbon dioxide combining power of the blood was 32 volumes per cent on the second day and 52 on the third. The temperature dropped to normal and the rash began to fade rapidly on the third day. The patient was practically well at the end of a week. There was a weight loss of 6 pounds (2.7 Kg.) in six days—obviously from loss of edema fluid. Blood obtained on the ninth day agglutinated Proteus OX 19 in a dilution of 1:320 and gave a positive complement fixation for Rocky Mountain spotted fever in a dilution of 1:512.

This appeared to be an excellent result in a moderately severe case of the disease.

CASE 4.—*History.*—L. S., a white girl aged 3, was admitted to the Sternberger Children's Hospital Aug. 9, 1946, complaining of fever and chills for four days, rash for three days and vomiting for one day.

Physical Examination.—The child looked sick but was conscious and not dehydrated. There was a generalized pink macular and papular rash, most intense on the extremities and buttocks and present on the palms and soles. The remainder of the examination revealed essentially normal conditions.

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[15] This case is reported through the courtesy of Dr. Roy M. Smith, Greensboro, N. C.

Treatment.—The child was given an adequate amount of fluids and vitamins and 3 Gm. of para-aminobenzoic acid every two hours. The temperature dropped to normal in twenty-four hours, and the rash faded. The administration of para-aminobenzoic acid was discontinued on the fifth day. On that day her blood serum agglutinated Proteus OX 19 in a dilution of 1:640 and the complement fixation test for Rocky Mountain spotted fever was positive in a dilution of 1:32.

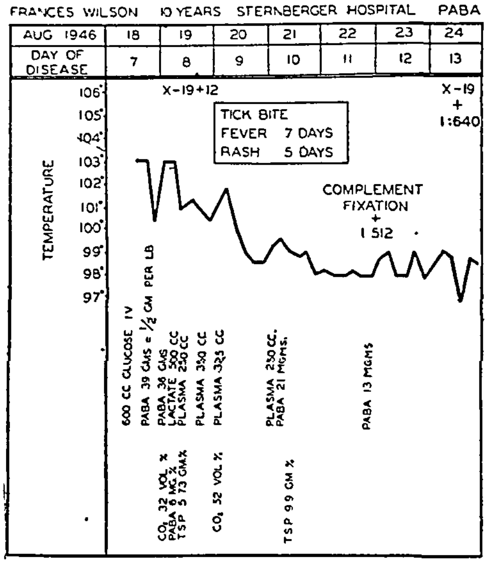

Chart 5 (case 3).—Excellent result with para-aminobenzoic acid therapy.

This was a mild case of the disease which, however, under treatment with para-aminobenzoic acid terminated with astonishing speed. By way of contrast the chart is shown (chart 7) of a boy (before para-aminobenzoic acid) with spotted fever so mild that he had no trace of rash. Defervescence was not complete until the fourteenth day of the disease.

Case 5.—*History.*—F. W., a white girl aged 5, entered the Sternberger Children's Hospital June 26, 1946 with a history of tick bite, fever and chills for six days, rash for four days and vomiting and delirium for two days.

Physical Examination.—The child appeared to be decidedly ill, was dehydrated and delirious. There was a fine hemorrhagic rash all over the body, most intense on the face and extremities and present on the palms and soles. Conjunctivitis, a coated tongue and a pulse rate of 160 were noted. The heart and liver were not enlarged.

Treatment.—A solution of dextrose in lactate-Ringer's solution and amigen was given intravenously; vitamins A and B complex, ascorbic acid and vitamins D and K were furnished in large amounts, and para-aminobenzoic acid, 2 grams per pound (0.5 Kg.) (5 Gm. every two hours in 40 cc. of a 5 per cent solution of sodium bicarbonate), was prescribed. After twelve hours there was considerable abdominal distention, which was attributed to the sodium bicarbonate. Accordingly, for the next twelve hours the dosage of this was reduced to 40 cc. of 2.5 per cent solution for each 5 Gm. of para-aminobenzoic acid. The next morning the clinical impression of acidosis was proved correct by a blood carbon dioxide combining power of 31 volumes per cent. The level of para-aminobenzoic acid in the blood was 65 mg. per hundred cubic centimeters. Acidosis was corrected with sodium lactate solution and the dosage of para-aminobenzoic acid reduced to 2 Gm. every two hours. The next morning the blood level was 120 mg. per hundred cubic centimeters, and administration of the drug was stopped. That evening the child went into a virtual collapse. The serum protein level, which had been 6.4 Gm. on admission, was found to be only 3 Gm. per hundred cubic centimeters. She was given 25 Gm. of serum albumin (obtained by courtesy of Dr. George Harrell) intravenously and later given plasma in large amounts. On the fifth day the para-aminobenzoic acid blood level was 80 mg., the serum protein level 5.38 Gm. per hundred cubic centimeters, and the temperature normal, but the child looked sick and was delirious. That evening fever and signs of cardiac failure developed, and by the next morning lobar solidification was present in the right lung. The para-aminobenzoic acid blood level was found to be zero. Para-aminobenzoic acid, 0.75 Gm. per pound (0.5 Kg.) of body weight, digitalis and penicillin were given. After four days of high fever the para-aminobenzoic acid level was 30 mg. per hundred cubic centimeters, and the dose was increased to 1 Gm. per pound (0.5 Kg.). The temperature dropped to normal in three days, and the child went on to an uneventful recovery. Blood obtained July 10 agglutinated Proteus OX 19 in a dilution of 1:320 and showed complement fixation which was positive in a 1:4 dilution for Rocky Mountain spotted fever.

This case was improperly handled in several respects: (1) too much para-aminobenzoic acid was given, and intoxication resulted; (2) too little sodium bicarbonate was used to buffer the para-aminobenzoic acid, with the result that acidosis was produced, and (3) the administration of para-aminobenzoic acid was stopped too soon, the level of the drug in the blood fell to zero overnight and a relapse with heart failure and pneumonia developed. When proper amounts of the drug were then given, rapid recovery ensued. Reliance was placed on the intravenous injections of amino acids to maintain adequate protein levels, although Harrell, Venning and Wolff[3] pointed out that this measure alone may not raise the blood protein concentration, since the ability of the liver to synthesize protein is often impaired in this disease. In spite of the administration of apparently adequate amounts of amino acids the serum protein level fell to 3 Gm. per pound (0.5 Kg.), circulatory failure supervened and only prompt administration of serum albumin and plasma averted a catastrophe.

COMMENT

In none of these patients was any difficulty encountered in the administration of the para-aminobenzoic acid, but gavage may be necessary in unconscious patients. The drug was given in a cold 5 per cent solution of sodium bicarbonate. Acidosis developed in 1 patient whose dose of para-aminobenzoic acid was too great (3 Gm. per pound [0.5 Kg.] of body weight) and was not adequately buffered with sodium bicarbonate solution. White blood cell counts were made at frequent intervals on every patient, but in no instance did leukopenia develop. The impression was

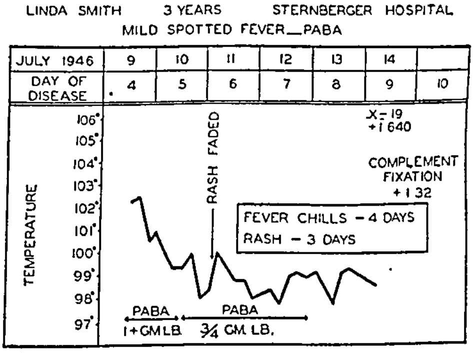

Chart 6 (case 4)—Mild case of Rocky Mountain spotted fever with para-aminobenzoic acid therapy.

obtained that abdominal distention and some degree of delirium were possibly due to the para-aminobenzoic acid. Several patients continued to be irrational after becoming afebrile, and in each instance the sensorium cleared as soon as the administration of para-aminobenzoic acid was stopped.

The striking thing about these patients was the amazing speed with which the temperature dropped, the rash faded and recovery ensued, as soon as adequate concentrations of para-aminobenzoic acid in the blood were achieved.

TREATMENT PLAN

The following comprehensive plan, summarized in the accompanying table, is proposed for the treatment of Rocky Mountain spotted fever:

1. The fluid and electrolyte balance should be restored to normal by means of intravenous injections of dextrose in saline or lactate-Ringer's solution. It should then be maintained at the normal level by the oral intake of fluids and added sodium chloride. It has been pointed out by Harrell, Venning and Wolff[3] that intravenous injections of electrolytes in solution in a patient whose serum protein is too low will serve only to produce more edema and, possibly, circulatory failure with pulmonary edema.

Comprehensive Plan for the Treatment of Rocky Mountain Spotted Fever

1.—Restore and maintain fluid and electrolyte balance with dextrose and saline or lactate-Ringer's solution.
2.—Correct acidosis with one-sixth molar sodium lactate.
3.—Maintain protein level with high protein diet, plasma, serum albumin and blood.
4.—Furnish vitamin needs with vitamins A, C, D, K and B complex (liver failure).
5.—Give para-aminobenzoic acid (PABA), 0.5 to 1 Gm. per pound (0.5 Kg.) of body weight per day, depending on the patient's size; at two hour intervals; buffer it with 10 cc. of chilled 5 per cent solution of sodium bicarbonate per gram; determine the blood level of the drug daily if possible; levels of 30 to 60 mg. per hundred cubic centimeters desirable; 60 to 80 mg. may be necessary; above 80 mg. are hazardous.
6.—Watch for possible toxic effects of para-aminobenzoic acid: acidosis, leukopenia, abdominal distention and delirium.
7.—Be on the alert for complications: heart failure (digitalis), pneumonia (penicillin usually no good) or encephalitis.
8.—Adequate laboratory studies are virtually a necessity.
9.—A soluble salt of para-aminobenzoic acid for parenteral injection is desirable.

2. Acidosis should be corrected by intravenous and subcutaneous injections of sixth-molar sodium lactate solution in appropriate dosage.

3. The serum protein level of the blood, depleted in this disease by starvation, vascular damage and hepatic failure, should be restored to normal by intravenous injections of plasma (and, in emergencies, of serum albumin). This level should be maintained by further injections of plasma at appropriate intervals and by a high protein diet (fed by gavage if necessary). If anemia develops, transfusion of blood should be given freely.

4. A high intake of vitamins should be furnished by mouth, by gavage or by the parenteral route if necessary. Thiamine is given to help prevent shock, ascorbic acid to obviate endothelial damage to blood vessels, vitamins B complex and K for damage to the liver and for increased prothrombin time.

5. Para-aminobenzoic acid, 0.5 to 1 Gm. per pound (0.5 Kg.) of body weight per day, is given, depending on the size of the patient. Small children get 1 Gm. per pound (0.5 Kg.); large children get half this much; the children of intermediate size get about 0.75 Gm. This is partially buffered with 10 cc. of a 5 per cent solutiion of sodium bicarbonate per gram in order to prevent acidosis and nausea and is given at two hour intervals. The drug is excreted with such rapidity that its administration at two hour intervals is essential in order to maintain an adequate concentration of it in the blood and tissues. The blood level should be estimated[13] each day at approximately the same time with reference to a dose of the drug. A level of 30 to 60 mg. per hundred cubic centimeters is desirable; a level of 60 to 80 mg. may be necessary to obtain the best results; concentrations above 80 mg. may be hazardous. Administration of the drug is usually continued for several days after the temperature has returned to normal.

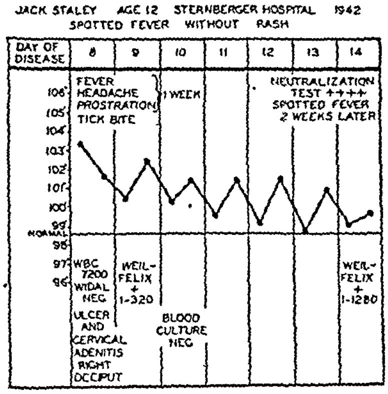

Chart 7 (J. S.)—Mild case of Rocky Mountain spotted fever without rash in boy aged 12; treatment prior to para-aminobenzoic acid.

6. The possible toxic effects of para-aminobenzoic acid should be watched for: acidosis, leukopenia, abdominal distention and delirium. If the white blood cell count falls below 3,000 the administration of para-aminobenzoic acid should be discontinued. Tympanites and delirium occur fairly frequently but are probably of little importance.

7. The complications of Rocky Mountain spotted fever should be carefully looked for: congestive cardiac failure (for which oxygen and digitalis in full doses are helpful); pneumonia (usually lobar, probably rickettsial, often not helped by penicillin, which should always be given); encephalitis, and thrombophlebitis. The cardiac failure is usually reversible, and when recovery occurs it is complete.

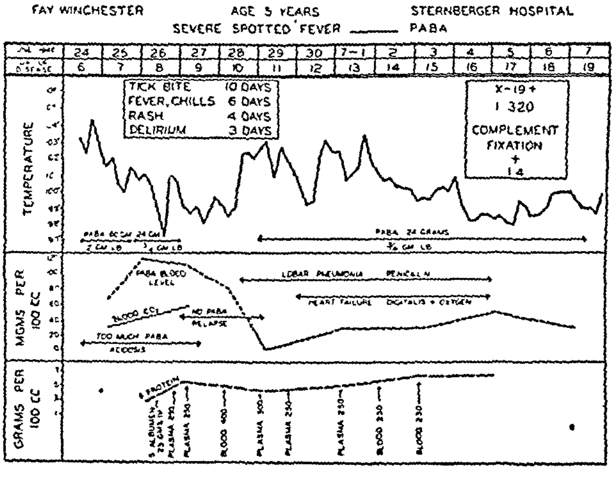

Chart 8 (case 5).—Severe case of Rocky Mountain spotted fever with para-aminobenzoic acid therapy.

8. It is possible but difficult to treat these patients without adequate laboratory control. Frequent determinations of the carbon dioxide combining power and the serum protein and para-aminobenzoic acid levels of the blood are virtually a necessity, while determinations of the nonprotein nitrogen and chloride blood levels and of the prothrombin time may be valuable aids.

9. It would be extremely helpful if a soluble preparation of para-aminobenzoic acid were available for parenteral injection in order to rapidly initiate treatment in the unconscious or vomiting patient.

10. It must be emphasized that para-aminobenzoic acid alone is not the sole answer to this therapeutic problem but constitutes an extremely important specific adjuvant comparable to insulin in diabetic coma or sulfadiazine in meningococcic septicemia and bacillary dysentery.

CONCLUSIONS

1. Rocky Mountain spotted fever is a common, serious and often fatal disease in this country.

2. Intelligently chosen and properly controlled supportive therapy is extremely helpful.

3. When para-aminobenzoic acid in adequate dosage is combined with proper supportive therapy, a rapid and brilliant therapeutic triumph is achieved.

4. The results obtained in 5 patients with Rocky Mountain spotted fever treated with this drug suggest that deaths from this fearful disease may be practically eliminated by such combined therapy.

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INTESTINAL TUMORS OF DYSENTERIC ORIGIN

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In any general discussion of intestinal tumors it is proper that principal attention be paid to the malignant neoplasms, which constitute the majority of such tumors. Almost all of these are confined to the colon, arising from tissue of ectodermal origin. It is common knowledge that such malignant tumors may arise in the small intestine as well, although these are rare. Benign tumors of ectodermal origin, such as polyps, are again common in the colon and rare in the small intestine. Malignant neoplasms of mesodermal origin are far fewer than carcinomas and are about equally frequent in small and large intestine. Benign mesodermal tumors are rare and seem to have a predilection for the upper and lower ends of the small intestine.

Although inflammatory intestinal tumors have not been recognized with any frequency until recent years, Virchow [1] as early as 1853 described inflammatory tumors or "pseudotumors" of the bowel, and Moynihan [2] and Mayo-Robson [3] published case reports of such lesions in 1907 and 1908, respectively. If intraperitoneal collections of pus undergoing organization are excluded, these tumors are almost invariably of a granulomatous nature. Tuberculosis is perhaps most commonly responsible for tumors of this type and can cause their formation anywhere in the small or large intestine, the ileocecal region being their site of predilection. Other infectious granulomas of more or less classic nature related to the intestinal tract have been extensively described as occurring in the course of lymphogranuloma inguinale, actinomycosis, blastomycosis, syphilis and anthrax.[4] Occasionally there is evoked a granulomatous response to the presence of a foreign body lodged in or apposite to the intestinal wall. Impairment of local intestinal vascularity following the repair of strangulated hernias has been described as underlying an inflammatory response characterized by the formation of a granuloma. In all these instances a specific nature of the granuloma is demonstrable. Granulomas have been described as occurring after simple, penetrating, isolated or solitary ulcers of the colon or terminal ileum. From the nature of the pathologic process it is reasonable to surmise that a specific cause existed but was not demonstrated in many of these instances. "Hyperplastic appendicitis" and "typhlitis" have even been presented as causes of ileocecal granulomas.[4a]

An interesting group of nonspecific granulomas has come to light with the advancing knowledge of nonspecific inflammatory intestinal diseases. The formation of polyps of the colon is a common outcome of the competition between destruction and repair in the course of nonspecific ulcerative colitis. A slight variation in the homeostatic response may result in the formation of typical inflammatory granulomas, which can appear anywhere in the colon. Ileocecal tumor is an occasional accompaniment of regional enteritis,[5] a disease in which there is also a parallelism of destruction and regeneration. When the pathologic process extends across the ileocecal sphincter, as it does when the disease takes the form of an ileocolitis, the picture is indistinguishable from that which occurred in a case of bacillary infection to be reported later in this paper.

In the present paper we are reporting 6 cases of inflammatory intestinal tumors of specific nature occurring as a complication of amebic or bacillary involvement of the intestine. The occurrence of such tumors in the course of amebiasis are receiving an increased amount of attention because of the heightening consciousness of the high prevalence of amebiasis in this country and because of the therapeutic implications which depend on the differentiation of these from malignant colonic neoplasms. Amebic granulomas, occurring as they do only in the colon, cannot be distinguished radiologically from cancer. In fact, in most of the cases hitherto described and 2 of those to be here reported the patients were subjected to unnecessary laparotomy because of the preoperative diagnosis of colonic neoplasm. Intestinal obstruction with or without a preceding history of diarrhea, inanition, perhaps a palpable abdominal mass and roentgenographic demonstration of an obstructing lesion of the colon constitute diagnostic pitfalls which can deceive all but the most wary. Since there is such variation in therapy and prognosis, it is doubly important to distinguish these amebic granulomas from malignant tumors.

From the Southern Baptist Hospital and Lakeshore Hospital.

Read before the Section on Gastro-Enterology and Proctology at the Ninety-Fifth Annual Session of the American Medical Association, San Francisco, July 4, 1946.

[1] Virchow, R.: Arch. f. path. Anat., 1853.

[2] Moynihan, B. G. A.: Mimicry of Malignant Disease in the Large Intestine, Edinburgh M. J. **21:** 228-236, 1907.

[3] Mayo-Robson, A. W.: An Address on Some Abdominal Tumours Simulating Malignant Disease, and Their Treatment, Brit. M. J. **1:** 425-428 (Feb. 22) 1908.

[4] (*a*) McMillan, F. L.: Ileocecal Granulomas, Illinois M. J. **81:** 15-20 (Jan.) 1942. (*b*) Fouser, R. H.: Chronic Inflammatory Tumors of Ileocecal Segment, Am. J. Surg. **49:** 124-128 (July) 1940. De Abreu Campanario, M.: Inflammatory Tumors: Roentgen Study, An. paulist de med. e cir. **42:** 119-133 (Aug.) 1941.

[5] Cave, H. W.: Inflammatory Lesions of Small Intestine: Surgical Aspects, J. A. M. A. **127:** 456-458 (Feb. 24) 1945. Crohn, B. B.; Ginzburg, L., and Oppenheimer, G. D.: Regional Ileitis; Pathologic and Clinical Entity, ibid. **99:** 1323-1329 (Oct. 15) 1932.

We wish to call special attention to 1 case of ileocecal inflammatory tumor occurring in bacillary dysentery and 1 such tumor in combined amebic and bacillary disease. Although the occurrence of inflammatory tumors in the course of chronic bacterial dysentery is admittedly rare, bizarre manifestations of this protean disease are to be anticipated, and such cases may be expected to occur with greater frequency in the future. This statement is made in view of the present widespread dissemination of infection due to Bacterium dysenteriae throughout the United States, as foreseen by Silverman[6] in his early report of cases from the South in 1926.

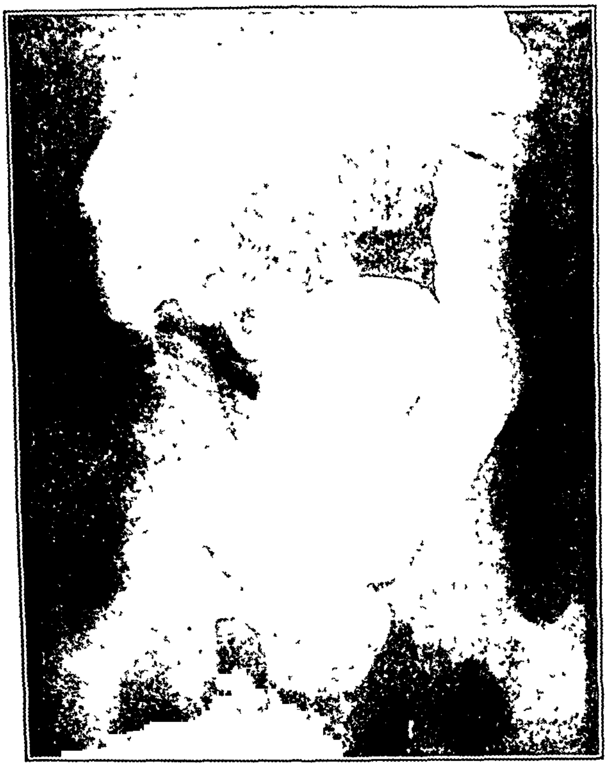

Fig 1 (case 1).—Barium enema showing ileocecal tumor.

REPORT OF CASES

Case 1.—A. R., a white man aged 19, was seen in 1942 with a one year history of cramplike lower abdominal pain, constipation and intermittent chills and fever. An appendectomy had been performed when the patient was 6 years of age. His mother had died of Hodgkin's disease.

Physical examination revealed essentially normal conditions. Proctosigmoidoscopy disclosed a reddened mucosa and spastic musculature but no ulceration or bleeding points. Barium enema showed a large filling defect involving the cecum and the ascending colon (fig. 1). Serial interval roentgenologic studies of the small intestine showed a constant irregular narrowing of the terminal 5 cm. of the ileum, with possible fistulous tracts between this segment of the ileum and the cecum. Culture of the stool resulted in the isolation of an organism of the Bacterium flexneri group

A course of vaccine therapy was instituted and, along with dietary and supportive management, was continued for three months, at which time the barium enema examination was repeated. Except for an increase in the stricture at the ileocecal level the observations were similar to those previously described. Because of this failure to improve with medical management a one stage resection of the tumor was performed, with anastomosis of the ileum to the transverse colon Microscopic examination of the tumor showed granulomatous inflammation. After the operation the patient made an uneventful recovery, and he has been asymptomatic ever since.

Case 2—M. H., a white man aged 51 with a past history of acute nephritis following yellow fever at age 18 and typhoid fever at age 21, which was complicated by cholecystitis, leading to a cholecystectomy six years later A duodenal ulcer was diagnosed clinically and roentgenologically at age 41. Roentgen examinations over a sixteen year period continued to show the duodenal deformity.

The present illness was of short duration and marked only by intermittent rectal bleeding Rectal examination revealed infiltration of the rectal wall, and proctoscopy showed, in addition to numerous ulcers in the rectum and sigmoid, an ulcerated tumor mass about 1 inch (2 5 cm) in diameter, 3 inches (7.6 cm.) above the anus. Vegetative forms of Endameba histolytica were seen on direct smears.

Therapy with emetine hydrochloride and Diodoquin resulted in the disappearance of symptoms and the complete regression of all lesions

Since his recovery from the amebic infestation the patient has been treated medically for intermittent symptoms attributable to his chronic duodenal ulcer.

Case 3.—A. B. was a white man aged 25, recently discharged from the Army, with a two and one-half year history of intermittent abdominal pain, which radiated from the epigastrium to the suprapubic region, and which was aggravated by most foods but not by milk, and was relieved by alkali. Examinations after a barium meal and enema which were performed while the patient was in the Army were said to have been negative. An appendectomy was performed but did not bring any relief. Intermittent diarrhea was noted for the last two years, and streaks of blood were seen in the stool six months before the patient's admission to the hospital.

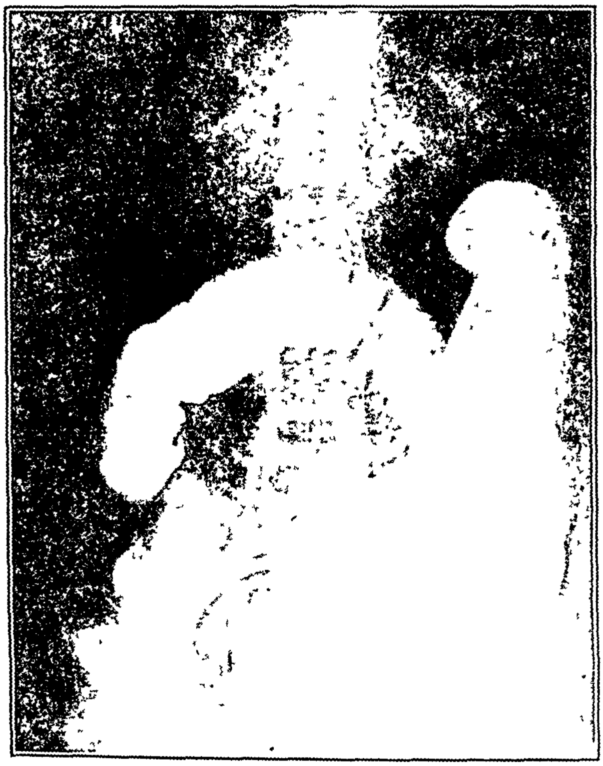

Fig 2 (case 3).—Barium enema showing large ileocecal filling defect

Physical examination revealed essentially normal conditions except for the presence of a hard, slightly tender, irregular mass in the right lower quadrant, in the line of the cecum, about 4 cm. in width and 10 cm. in length. Rectal examination revealed normal conditions. Proctosigmoidoscopy repeated several times did not show any mucosal abnormality. Examination of the saline-purged stool failed to show the presence of E. histolytica. Culture of this stool resulted in the isolation of Bacterium shigae. Examination of the colon by means of a barium enema revealed a "large, irregularly annular, filling defect of the cecum and proximal ascending colon, sharply demarcated from the apparently normal distal gut" (fig. 2). The terminal few centimeters of the ileum were apparently involved by the same process.

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[6] Silverman, D. N Chronic Bacillary Dysentery, M. Clin. North America 9: 1167 1171 (Jan) 1926. The Increasing Incidence of Bacillary Dysentery, editorial, J. A M. A **121:** 1158 (April 3) 1943.

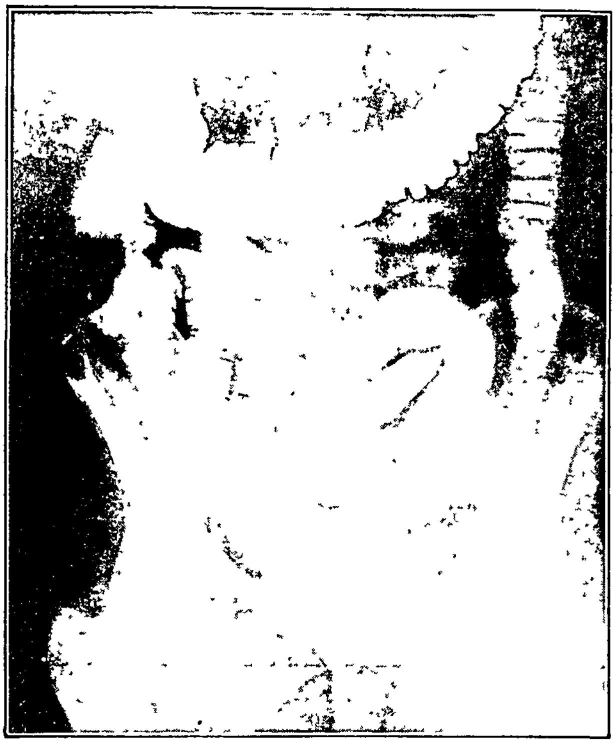

Fig. 3 (case 5).—Barium enema showing tumor of cecum.

With resection of the tumor in view, an ileotransverse colostomy was performed. At laparotomy the cecum presented itself as a hard, movable mass, and the postoperative surgical diagnosis was carcinoma. Section of an iliac node biopsy showed inflammation. The terminal ileum appeared to be inflamed and was continuous with the mass. The patient ran a stormy postoperative course marked by intestinal obstruction, for which an ileostomy was done, sepsis and death on the forty-first postoperative day.

Autopsy revealed the mass as described, a section of which showed trophozoites of E. histolytica and multiple amebic abscesses of the liver. Culture of material from the tumor and from the abscesses failed to demonstrate B. shigae.

Case 4.—Dr. A. E. was a white man aged 68, with a four day history of frequent mucosanguineous stools, following two years of intermittent diarrhea and loss of weight of 15 pounds (6.8 Kg.). Physical examination revealed essentially normal conditions except for the rectal examination, which disclosed the presence of a hard mass on the left lateral wall about 3½ inches (9 cm.) from the anal margin and extending toward the posterior wall. The proctoscopic appearance was that of an ulcerating neoplasm. Smears from these ulcers, however, showed numerous motile trophozoites of E. histolytica. In order to rule out concomitant carcinoma a biopsy was made from the margin of the tumor, the section being reported as "tumefied nodule . . . with . . . E. histolytica as the causative factor. No evidence of malignancy." Culture of the bowel contents was negative.

Vigorous antiamebic therapy resulted in the complete disappearance of the tumor mass with restitutio ad integrum.

Case 5.—Mrs. A. E. was a white woman aged 63, the wife of Dr. A. E. (case 4), with a one year history of intermittent attacks of abdominal distention and cramps in the right lower quadrant accompanied with low grade fever. Physical examination revealed essentially normal conditions except for resistance to deep palpation of the right lower quadrant. Barium enema showed the presence of a large filling defect of the cecum (fig. 3).

With a preoperative and postoperative surgical diagnosis of carcinoma of the cecum, resection of the cecum with side to side anastomosis of the colon was performed. The specimen disclosed a large necrotic ulcer of the cecum, approximately 1.5 by 1.75 cm., having an indurated base with several smaller satellite ulcers. Smears taken from the ulcer showed motile trophozoites of E. histolytica; sections disclosed a chronic inflammatory granulomatous appearance with no evidence of cancer.

After this circuitous arrival at a diagnosis, antiamebic therapy was instituted and the patient recovered.

Case 6.—J. T. was a white man aged 52 with a two week history of lower abdominal pain and mucosanguineous diarrhea accompanied with low grade fever. The previous history was irrelevant.

Physical examination revealed essentially normal conditions except for tenderness throughout the lower part of the abdomen. Proctoscopic examination revealed infiltration of the bowel wall and multiple necrotic ulcers at the rectosigmoid junction. Barium enema showed a filling defect at the rectosigmoid junction (fig. 4). The clinical diagnosis was carcinoma, but smears from the ulcers showed numerous motile trophozoites of E. histolytica.

With antiamebic therapy there was complete disappearance of the lesion and regression of symptoms.

COMMENT

Recently, we[7] described 3 fatal cases of amebic colitis characterized by an extensive ulceronecrotic process. Two of these cases were complicated by concomitant infection with a dysentery organism, which may explain in part the fulminating course. In case 3 of the present paper, the response of the bowel to the presence of amebas was the formation of a large granuloma without other demonstrable pathologic condition. Although the patient died postoperatively, it is reasonable to infer that the fatal outcome was promoted by the presence of the B. shigae. In all these cases, however, the pri-

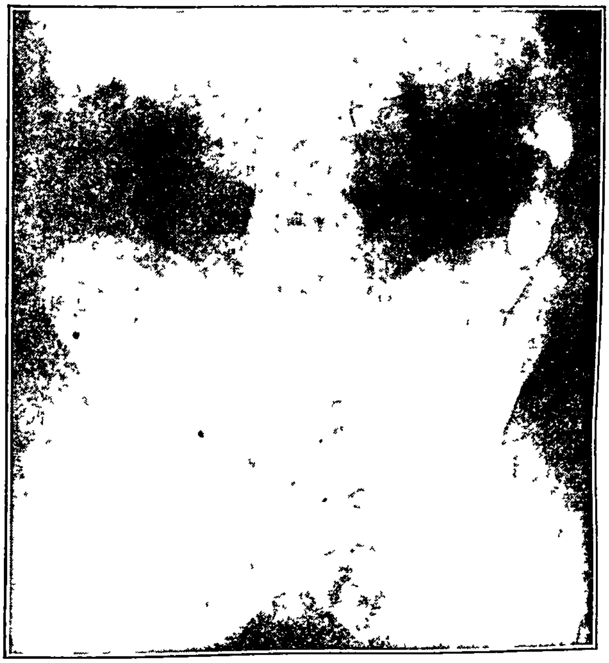

Fig. 4 (case 5).—Barium enema showing filling defect of rectosigmoid.

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[7] Silverman, D. N., and Leslie, A.: Intractable Amebic Colitis with Special Reference to the Ulceronecrotic Form, J. A. M. A. 129: 187-190 (Sept. 15) 1945.

mary agent of death was probably the ameba. It is difficult to explain why on the one hand there is a necrotizing process and on the other a granulomatous response evoked by the same organism. For a facile explanation it might be conjectured that there is a competition between the destructive activity of the ameba and the regenerative power of the host. If the infestation is sudden and overwhelming there is no time for marshaling the defenses against the invasion, and the unopposed histolytic activity of the ameba results in the severest form of the disease. This set of circumstances was observed by Faust[8] to occur in outlanders who entered areas of amebic hyperendemicity. In such regions the natives apparently enjoy a degree of immunity, or at least resistance, to the extreme manifestations of the disease, because the incidence of infestation is high while the incidence of clinical symptoms is low. As a corollary to this observation, it may be stated that many of the reports of cases of amebic granulomas come from South America,[9] where amebic infestation is widespread. If this resistance exists or the initial infestation is not tremendous, the local regenerative process may be excessive in certain persons, ultimately resulting in the formation of a tumor. In view of the high incidence of amebic infestation this explanation is inadequate to account for the relative infrequency of amebic granulomas. Although there are various strains of E. histolytica, there are too many gaps in our present knowledge for us to do any more than mention the possibility of specific strains associated with the granulomatous response. Perhaps an undiscovered concomitant infection due to B. dysenteriae may contribute to the provocation of this response.

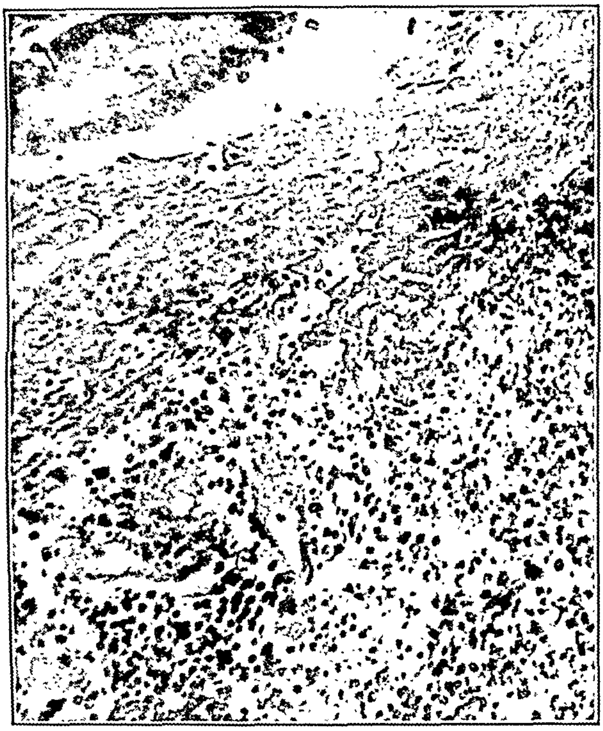
Fig. 5 (case 3).—Photomicrograph of cecal tumor.

The outstanding and almost universal characteristic of amebic granulomas is their response to specific therapy. The rapid resolution of large tumors after the administration of emetine hydrochloride can only be compared with the melting away of syphilitic gummas after exhibition of the iodides. An amebic granuloma in which extensive fibrosis has taken place may require surgical intervention, but this should not be considered until thorough amebicidal therapy has proved inadequate. Large tumors are seen to disappear after medical therapy alone, as was shown in cases 2, 4 and 6 herein reported. The large granuloma associated with the infection with B. flexneri (case 1) did not respond to autogenous vaccine therapy, and since there was no more specific type of therapy available at the time the patient was observed, a surgical resection was successfully performed. It may be that antibiotic therapy, when more highly developed, will be effective in such cases. It should be noted that inflammatory tumors occurring in the course of bacterial dysentery must be exceedingly infrequent, since search of the recent literature failed to disclose other such cases. It is probable, however, that many of the inflammatory tumors heretofore described were bacterial in etiology, the organism being elusive and not successfully cultured.

The importance of correct diagnosis is basic and elementary, but particular importance is attached to making the correct diagnosis of a disease for which specific therapy is curative. The fatality reported herein might have been avoided had amebicides been administered. If the tumor had been resected in one stage, as was done in case 5, the pathologist would have provided the diagnosis and antiamebic therapy would have been instituted. It should in most cases, however, be unnecessary to enlist the surgeon's aid to establish a diagnosis of amebiasis. Rectal scrapings or even a biopsy if a tumor is within reach of the sigmoidoscope can be diagnostic. If amebic granulomas are considered in the differential diagnosis of tumors of the colon, careful examination of the saline-purged stool will in most instances of amebic tumors reveal the protozoon.

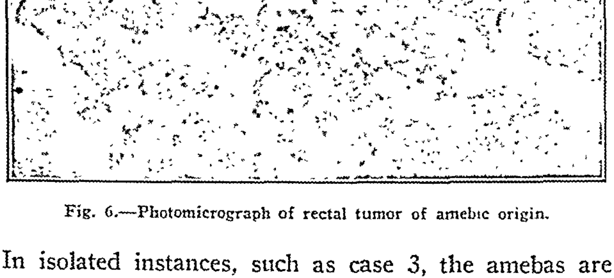
Fig. 6.—Photomicrograph of rectal tumor of amebic origin.

In isolated instances, such as case 3, the amebas are present only in the depths of the tumor mass and elude the parasitologist, to the detriment of the patient. Although it is contrary to scientific instincts to give specific treatment without a specific diagnosis, a case such as this gives one pause, and in the younger age group at least, when the history is at all suggestive, such action might well be justified.

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[8] Faust, E. C.: Some Modern Concepts of Amebiasis, Tr. & Stud., Coll. Physicians, Philadelphia **11:** 101-113 (Dec.) 1943.

[9] Karlen, M. A.: Inflammatory Tumor of Large Intestine (Amebic), Arch. urug. de med., cir. y especialid. **23:** 63-72 (July) 1943. Marin-Moreno, N., and Faimberg Wassermann, I: Amebic Rectal Tumor Complicating Chronic Dysentery: Case Simulating Cancer, Arch. argent. de enferm. d. ap. digest. y de la nutricion **17:** 449-456 (April-May) 1942. Harau, A. M.: Intestinal Occlusion due to Amebic Tumor of Colon, Arch. urug. de med., cir. y especialid. **16:** 177-187 (Feb.) 1940.

The problem of amebic granulomas is no longer regional, limited to the South and the tropics as heretofore believed. Cases of amebic tumors are reported from northern areas. Likely and Lisa[10] reported 1 case of granuloma of the large intestine associated with amebiasis in the state of New York, and in 1935[11] an amebic tumor was presented as a Cabot case in Boston.

SUMMARY

1. Six cases of inflammatory intestinal tumors are reported. Four of these were amebic granulomas, 1 a granuloma occurring in combined amebic and bacillary disease and 1 a granuloma in uncomplicated chronic infection of the bowel with Bacterium dysenteriae.

2. The diagnostic and therapeutic implications are discussed with emphasis on distinguishing these tumors from malignant neoplasms.

ABSTRACT OF DISCUSSION

Dr. Russell S. Boles, Philadelphia: I congratulate Drs. Silverman and Leslie on their alertness in recognizing these cases. Most of us are not as aware of the possibility of these lesions as we should be and as I hope we will be hereafter. One of the most important lessons that this paper teaches is the necessity of securing a very complete history of all cases. One of the most unfortunate consequences of the accelerated course for medical students and for interns that I have seen in teaching students is their indifferent attitude toward a good history, and their too ready acceptance of a roentgenologic or laboratory diagnosis. I think it is most unfortunate, and it is going to continue to cause mistakes of the kind that Dr. Silverman has pointed out here. It would be a bit small, I guess, at this time to question the use of the word tumor in these cases. "Tumor" in my conception is a mass of unknown etiology. Now, these masses that are due to the ameba are, of course, granulomatous lesions of more specific type and not, strictly speaking, tumorous. I should like to refer briefly to 2 cases that I should perhaps question a little bit. The first case: The boy 19 years of age, with a one year history of constipation. Why attribute the lesion that was demonstrated in the cecum necessarily to the Bacterium flexneri organism that was found, in view of the steady, progressive, downward course and the necessity of ultimate resection? How could the possibility of a primary hypertrophic granulomatous type of tuberculosis of the cecum be entirely eliminated? The roentgenogram suggested that this could be a primary lesion. The ulcerative types are secondary to pulmonary lesions. I believe, in 99 to 100 per cent of cases. Case 2 is remarkably interesting and unquestionably bona fide, showing a ready response to emetine therapy and ultimate regression of the tumor and the symptoms. I was interested, however, in the extremely short history given of only two weeks, yet a tumor mass had developed without any previous suggestive symptoms of intestinal pathology. In case 3 could the amebas have been coincidental? I didn't hear or see in the paper any pathologic report of the tumor aside from the finding of amebas. One must be aware, naturally, of the possibility of carcinoma being associated with amebic infestation, and whether case 3 is primarily and solely a case of amebic granulomas is in my opinion something to be considered. The role of the Bacterium shigae here—is that to be considered necessarily specific or not? Perhaps it should be so considered if it is to be assumed that the B. flexneri organism in case 1 was specific. Could that have been carcinoma in a young man, 25 years of age? It is not rare. Case 4, again, was most interesting, a bona fide amebic, specific granuloma with a regression of symptoms. This paper emphasizes the necessity for all of us to consider amebic granulomas in questionable bowel lesions. I want to ask Dr. Silverman one question: How did you treat the cases with emetine, and how long did it take for you to notice a regression of the tumor mass in the cases in which that happened?

Dr. Hyman I. Goldstein, Camden, N. J.: "Tumor" is a swelling or morbid enlargement; it is a mass of tissue (new) which persists and which has no physiologic use—not necessarily always a *benign or malignant neoplasm!* Our friend, Dr. Boles, is in error when he criticizes Dr. Silverman for speaking of a granulomatous tumor or mass! Dr. Silverman was correct. A "tumor" is any swelling or tumefaction and the word also refers to any neoplasm.

Dr. Daniel N. Silverman, New Orleans: For years we have emphasized that diarrhea is absent or only occasional in almost 80 per cent of cases of chronic infection due to Bacterium dysenteriae and amebic infestation. The pathologic process may be localized to the right colon in these conditions and produce no objective irritative manifestations. The lesions were studied microscopically. Tuberculosis may have played a part, but the organism was not found, and the pathologic changes of tuberculosis were not in evidence. We could not say that tuberculosis existed. Now concerning treatment: The amebic granuloma responds as readily to emetine hydrochloride as does the hepatic abscess, with practically complete disappearance a week to ten days after the administration of emetine is started. I might reiterate that in the cases, our own and those of others, in which there was surgical intervention, this was because the correct diagnosis was not made. In response to the question by Dr. Boles on how long it took for regression of the tumor mass, the answer is about ten or twelve days.

CHRONIC ULCERATIVE COLITIS

Proctologic Interpretation and Treatment

MARTIN SELER KLECKNER, M.D.
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Since proctologic practice includes the study, diagnosis and treatment of all pathologic conditions of the large bowel, it is not unusual to find segmented areas of large portions of the colon involved in advanced stages of inflammatory disease. This is primarily revealed by careful history, thorough physical examination, and sigmoidoscopic findings, aided by the double contrast air enema and the laboratory examinations of smears and cultures taken from these infected parts. Such familiar pictures, in contradistinction to the acute forms of the disease, are variously spoken of as nonspecific, chronic ulcerative, thromboulcerative or idiopathic colitis. My own belief is that a combined designation (chronic nonspecific ulcerative colitis) is the most practical term, particularly when reporting this diagnostic condition to the general practitioner.

A detailed description of the pathologic and clinical picture involving the colonic mucosa in this disease would be time consuming, but a review of the splendid efforts of some of the gastroenterologists (Bargen, Bockus, Crohn, Felsen and Paulson in particular) would prove most helpful and instructive. Briefly, the primary etiologic factor in chronic nonspecific ulcerative colitis cannot be determined, but it is known that the resultant secondary invasions into the bowel wall are due to certain causes—bacterial, toxic or both. It has been the impression that these lesions of the bowel are frequently influenced by certain factors or phenomena which may alter the progress of this disease. These conditions may be due to allergic, immunologic, nervous or nutritional faults or deficiencies.

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[10] Likely, D. S., and Lisa, J. H.: Granuloma of Large Intestine Associated with Amebiasis, New York State J. Med. 42: 2322-2323 (Dec. 15) 1942.

[11] Cabot Case 21312, New England J. Med. 213: 235-238 (Aug.) 1935.

Read before the Section on Gastro-Enterology and Proctology at the Ninety-Fifth Annual Session of the American Medical Association, San Francisco, July 4, 1946.

Seldom do these patients seek the advice of the gastroenterologist or proctologist until both clinical and pathologic conditions have reached the chronic stage, which will usually be several months to a year after the onset of the existing trouble. The symptomatologic history elicited in these cases revealed diarrhea, blood with mucus in the stool and tenesmus as most commonly present. Dull pain or discomfort in the lower part of the abdomen, constipation (in old chronic cases), flatus, weakness and loss of weight followed in that order. Acute exacerbations of this chronic condition are not uncommonly seen, with the symptomatology greatly aggravated. Ofttimes rest in bed and hospitalization are required to combat this sudden change in the disease process of the patient.

Table 1.—*Data on Two Hundred and Twenty-Three Cases of Chronic Colitis (Private Practice Only, 1940-1945)*

Ages	Chronic Ulcerative Colitis (Near) with Considerable Response to Antiamebic and Antidysenteric Treatment but with Readily Controlled Flare-Ups (No Work Loss) 129 Cases (58%)				Chronic Nonspecific Ulcerative Colitis (Absolute) 94 Cases (42%)			
	Male		Female		Male		Female	
	No.	%	No.	%	No.	%	No.	%
0-10	..	..	1	2	..	..	..	..
11-20	3	4	1	2	3	6	5	10+
21-30	9	12	5	9	11	27	10	21
31-40	18	24	13	24	15	32	15	32
41-50	22	20	12	22	9	21	7	15
51-60	13	17	15	28	6	13	5	10+
61-70	10	13	6	11	3	6	5	10+
71-80	1	1						
Total	76		53		47		47	

Cancer found in 12 (9.1%) Ratio 2:1 Cancer found in 4 (4.2%) (*C* and *D* groups, table 2)

Table 2.—*Age and Case Statistics on Chronic Nonspecific Ulcerative Colitis from Private Practice (1940-1945)*

A	Under 1 yr. history	20 cases or approximately 20%
B	1-2 yr. history	24 cases or approximately 26%
C	2-3 yr. history	26 cases or approximately 28%
D	3-5 yr. and over	24 cases or approximately 26%

This series of 94 cases does not include 32 cases seen in consultation but referred to general practitioners and treatment prescribed.

	44 (*A* + *B* Group)		26 (*C* Group)		24 (*D* Group)	
	No.	%	No.	%	No.	%
I. Responding to treatment and considered cured (total cured: 40/94, or approximately 38%	22	50	10	38	6	25
II. Much improved but discontinuing treatment and continuing with gainful occupation	16	36	6	23	8	33
I and II. Cured and improved	38	86	16	61	14	58

Total cured and improved, groups *A* through *D* inclusive: 68 of 94 (72%)

Total unimproved, groups *A* through *D* inclusive	26/94	28%
1 Malignant types (died) (fulminating, unoperated: 4)	4/94	4%
2 Cases advised operation	22/94	23%
3 Cases absolutely refusing operation	9/94	9%
(3 malignancies; remainder, 6 alive)	9/22	40%
4 Cases operated (ileostomy/colectomy)	13/22	59%
5 Mortality (4) (1 malignancy plus 3 chronic nonspecific ulcerative colitis)	4/13	30%
Total deaths (1, 3 and 4)	11/94	11%
Total deaths, surgery alone	8/94	8%

Table 3.—*Medical (Nonsurgical) Phase of Treatment of Chronic Nonspecific Ulcerative Colitis (Private Cases)*

1. Rest (in bed if necessary)
2. Diet (nonirritating, low residue, high caloric)
3. Therapeutic test (in absence of laboratory findings):
    a. Daily subcutaneous injection of emetine hydrochloride ¾ grain (0.045 Gm.) for one week
    b. By mouth (the following have been found efficacious):
        (1) Carbarsone in capsules, 4 grains (0.24 Gm.) twice a day (10 days)
        (2) Diodoquin, 9 grains (0.58 Gm.) three times a day for 1 month
        (3) Emetine bismuth iodide (in capsule), 3 grains (0.2 Gm.) twice a day (10 to 14 days)
        (4) Chiniofon, 0.5 to 1.0 Gm. three times a day (7 to 10 days)
    c. Retention enemas: Carbarsone, 2.0 Gm. in isotonic solution of sodium chloride, 6 ounces (180 cc.) (nightly—7)
    d. Autogenous vaccines or Bargen streptococcus vaccine
    e. Antidysenteric serum

Physical examination should always include study of the oral, nasal and aural cavities as probable sites of some hidden focus of infection. The thoracic and abdominal regions may reveal other important clues which are substantiated by roentgenologic study. I have frequently found that even patients seen in the earlier stages of the disease present a slight soreness in the right iliac fossa, more so than in the left, while the abdomen itself is usually soft, even when extensive portions of the bowel are involved. It is by sigmoidoscopic examination, however, that the true diagnosis is made. Visual confirmation of these terminal bowel lesions may vary from a smooth, moderately congested mucosa with occasional pinpoint hemorrhages (brought on frequently by the passage of the sigmoidoscope through a somewhat constricted lumen) to the freely bleeding types on whom its passage may cause considerable pain and discomfort. Because of this, much difficulty may be experienced and undue chance may be taken if continued efforts are made to pass the sigmoidoscope above the rectosigmoidal junction. Repeated sigmoidoscopic and roentgenologic examinations are necessary because the diseased bowel ofttimes shows much variation in the pathologic conditions present. Aside from the occasional regional types, it has been my experience that at one time or other the rectum or rectosigmoid is, or was, usually involved in the ulcerative process of this disease; furthermore, approximately 50 per cent of my cases in private practice showed involvement which did not extend beyond the proximal limits of the rectosigmoidal area. In all these cases the diagnosis was verified by careful roentgenologic laboratory study. The cases which revealed greater involvement seemed to be rather the result of direct extension from the rectosigmoidal area, usually with the descending colon and then the transverse portion of the large bowel involved in the severer types, and often with more or less irreparable damage. These modifications and changes are greatly influenced by the virulence of the disease itself, the length of time the patient has suffered with colitis, together with the reactions which various patients displayed not only to the treatment afforded them but also to emotional disturbances. Dietary indiscretions and, to a lesser extent, some nutritional deficiencies and the avoidance of colds also influenced these modifications and changes. It is generally believed that patients with chronic nonspecific ulcerative colitis are seldom free from symptoms. In my series of private patients I have found a goodly number who seemed to be happy and minus any appreciable gastrointestinal disturbances for weeks at a time. They continued at their regular routine, several of them operating heavy cranes even though sigmoidoscopy revealed "lesions in abeyance." This I found was possible chiefly because they followed a strict regimen of living (with the usual high caloric low residue diet), and practiced the occasional self administration of certain medicaments, lately and most effectively, phthalylsulfathiazole (Sulfathalidine). I should like to mention that in the comparison between patients from private and free clinic practice, one is permitted a higher score for betterment and for cure in the former group; and, because of this and their ability "to get along pretty well," permission is less freely granted by private patients for the performance of operative procedures other than those of minor degree.

The study of the statistics given in table 1 reveals that a total number of 223 private cases of chronic colitis are reported in the period from 1940 to 1945, of which 129 (58 per cent) were ruled out as not being strictly chronic nonspecific ulcerative colitis. These patients showed considerable response to antiamebic, antidysenteric and similar types of treatment. Although many of them showed "return flare-ups" at intervals of three or four months, they never seemed to get out of "treatment control"; the patients felt well and frequently attributed these so-called relapses to their own mode of living. These 129 cases were classified by me as "near chronic nonspecific ulcerative types." Of the remainder 94, or 42 per cent, were truly cases of chronic nonspecific ulcerative colitis with an equal distribution in sex and with the disease appearing most commonly between the ages of 20 and 40. In a comparison of these with the "near" cases, in which the age limit extended from 30 to 60, I found that in this "near" group cancer was more frequently detected (9 per cent to 4 per cent).

TABLE 4.—*Chronic Nonspecific Ulcerative Colitis: Other Drug Therapy*

a. Occasional purge, prescribing castor oil, 15 to 30 cc in orange juice and sodium bicarbonate
b. Fuller's earth products alone or combined with bismuth plus camphorated tincture of opium
c. Atropine alone or combined with codeine
d. Calcium compounds (calcinum gluconate 20 to 40 grains, or 1.4 to 2 6 Gm, daily)
e. In cases in which constipation is a factor, iron with liver extracts and vitamins (see below)
f. Vitamin replacement (B complex, ascorbic acid and vitamin K, especially); (Synkayvite* 5 mg. by mouth four times a day as "K," when there is much bleeding; or Hykinone, 4.8 mg. [1 cc. hypodermically] as required)
g. The administration of amino acids by mouth or intravenously. (Parenamine, acid hydrolysate of casein fortified with dl-tryptophane, 15 per cent sterile solution in 100 cc) to provide calories and protein need, 4 calories per gram Best given with 5 per cent dextrose in isotonic solution of sodium chloride. (I have been using a new, unofficial product called "Delcos Granules," which contains amino acids, 3 2 calories per gram, by mouth)
h. Local application of 5 per cent silver nitrate solution to ulcerations through the sigmoidoscope
i. Instillations per rectum of a 5 to 10 per cent solution of bismuth subgallate in olive oil (1 to 4 ounces, 30 to 120 cc.) one or two times a day for retention, after cleansing enema
j. Insufflations via sigmoidoscope of sulfathiazole and bismuth subgallate powder every three to four days
k. Phthalyl sulfathiazole (sulfathaladine) 2 0 to 4 0 Gm. daily by mouth (it is nontoxic and requires no bicarbonate of soda: with 50 per cent recovery in stool, action is confined locally to ulcerations)

* Synkayvite is tetrasodium 2 methyl 1, 4 naphthohydroquinone diphosphoric ester; Hykinone is menadione sodium bisulfite.

TABLE 5.—*Chronic Nonspecific Ulcerative Colitis: Surgical Phase*

Preliminary (permanent single barrel) ileostomy, to be followed in two to three months by two stage colectomy (complete). Coupled with the preoperative care, there must be included the free use of whole blood, plasma and dextrose, intravenously

The earlier the cases in the absolute group were diagnosed and the shorter the duration of the disease, the better were the chances in general for apparent cure and improvement, as is observed by reference to table 2, in which 72 per cent (68 of 94) showed satisfactory results to medical or (minor) surgical treatment other than ileostomy, colectomy or both. Each of the 223 patients was given the same routine proctologic examination, and the usual roentgenologic and pathologic procedures were followed. Unless early stool examinations were done by a competent technician, the results were discounted and the studies were repeated. Cultures, smears and swabs from the involved membranes were carefully investigated and studied. Routine studies of the blood and urine included tests for syphilis, and in returned war veterans the presence of malaria was always suspected. More advanced cases demanded tests for sedimentation, blood urea, serum protein and plasma chlorides. Craig's complement fixation tests, as recommended by Kiefer, proved helpful in some of these cases in which we attempted to exclude the diagnosis of amebic disease. At times studies of hepatic function proved decidedly valuable.

Repeated study after a barium enema yielded comparative information on the extent and progress of the colonic disease. I have been particularly partial to gaining information via the double contrast barium air enemas, although use of this procedure has not met with ready response on the part of the roentgenologists, mainly because of the time required for its satisfactory accomplishment. Certainly these patients, stricken with such seriously inflamed lesions of the bowel, cannot be hurried and will frequently consume much valuable time in a busy roentgen laboratory, but unless care and patience are used I have found that the results are unsatisfactory. The frequent study of all specimens, best obtained directly from the surface of the diseased bowel itself through a sterilized sigmoidoscope, has proved the best way to determine bacterial flora. Material obtained in this manner should be examined at once and also planted on the appropriate culture medium as directed by the pathologist. Biopsy specimens, scrapings and smears were usually the materials forwarded for laboratory investigation. Frequent examinations of the feces of these patients were performed. The principal infective agents looked for were the Entameba histolytica with its cysts, the organisms causing dysentery, acid-fast bacilli (Mycobacterium tuberculosis) and the commoner parasites. The work entailed in the study of such materials by the personnel of the pathologic laboratory is well known, and their full cooperation and correct diagnosis may often spell cure to many of these patients.

The best results were always obtained when the combined efforts of the gastroenterologist, pathologist, radiologist and proctologist (or such surgeon well versed in colon operative technic) were utilized. As a proctologist, most of my work comprises surgery of the large bowel, but the medical phase in all these cases is a primary and extremely important factor. The nonsurgical measures which I employed may be noted by referring to tables 3 and 4. Unless full cooperation was procured and fairly good response to treatment was noted (in these 94 private cases) operative measures advising preliminary ileostomy were urged with colectomy to be performed later (table 5). As private patients are invariably assured of their own financial support, operative intervention was usually refused—particularly when the patient was informed that an ileostomy bag would have to be worn. There was difficulty in convincing patients in years past that a permanent colostomy for cancer of the colon, if well managed, did not require the wearing of a bag; this has proved a convincing argument to such patients. Today, difficulty is being experienced because the wearing of an appliance has been the real objection to accepting surgical intervention, even though cure from the malady is assured. The fairly long period of hospitalization with its usual three stage operative procedure before cure can be obtained has not been the reason for absolute refusal, as many may have believed. I am convinced of greater success with the continuance of efforts toward the eradication of the diseased colon (in toto) and the performance of surgical operation at those opportune times when the ulcerative processes have become fairly quiescent. After medical treatment has been given every opportunity for betterment, and radiologic interpretation of diseased colon involvement is complete (which may even be present in patients followed for one year), then preliminary ileostomy must be performed, with colectomy (in two stages) usually following within the next two or three months. This measure provides cure. With time and full cooperation on the part of the patient as to diet and local care (but with the necessity of wearing a bag), health and future happiness will come to those patients whom medical treatment alone has failed to cure.

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ABSTRACT OF DISCUSSION

DR. A. W. MARTIN MARINO, Brooklyn: Chronic ulcerative colitis may give rise to serious consequences. It is primarily a medical and not a surgical problem unless serious sequelae and complications arise. The ideal treatment has not been found. Fortunately, most patients respond reasonably satisfactorily to good medical management and carry on their duties, with only occasional relapses. In a special group of patients there is an aspect of this disease at which I never cease to marvel, and it is this: periodic proctoscopic examinations of this special group of patients over a period of years will show any or all stages of chronic ulcerative colitis, and yet these patients have no symptoms and state that they feel perfectly well! It is true that these patients may suffer mild relapses from time to time, but these are of short duration and frequently follow an infection of the upper part of the respiratory tract. Some patients fail to respond to carefully planned conservative measures including diet, vitamins, sulfonamide compounds, and blood transfusions. Their fever, general malaise and bowel symptoms persist, and complications such as inability to eat, increasing abdominal distention, severe hemorrhage and perforation, ensue. Ordinarily that is the type of patient on whom I would consider performing an ileostomy with eventual colectomy. I might say that when I perform an ileostomy I transect the ileum so that the ileal stream is completely diverted. My experience with colostomy performed proximal to the disease in the colon is so discouraging that I shall dismiss that subject at this time. I have had under my care this year 4 patients desperately ill with chronic ulcerative colitis. In 1 there developed definite signs of perforation and peritonitis. All 4 patients were given 30,000 units of penicillin every three hours day and night for periods of from seven to twenty-two days in preparation for their operation. However, ileostomy was not necessary in any of these patients because in a matter of days improvement took place, and all left the hospital in a condition ranging from improved to fully recovered. I recognize that the beneficial results I have observed do not necessarily mean permanent relief, but I am sufficiently encouraged by this treatment to feel that it warrants further trial. From what I have seen, I cautiously state that the administration of penicillin in high doses may be as lifesaving a procedure as ileostomy, without the disadvantages of the latter. The more ileostomies I have performed the more I have wished that there was some other method of taking care of these patients. A colostomy performed in the course of a combined abdominoperineal resection for carcinoma of the rectum is an entirely different affair than an ileostomy. I can educate patients with colostomies so that they accept their condition as a matter of course, but it seems to me that my patients with ileostomy forlornly sit on my doorstep waiting to have the continuity of their intestine resumed. These patients with ileostomy forget that the operation was performed as a lifesaving measure, and in as much as the survivors feel perfectly well, they resent the inconvenience of the more or less constant ileal drainage, regardless of what kind of a bag they may be wearing. For that reason I have sought, for some time, to find other means of taking care of these persons. In cases in which the rectum and colon are irremediably crippled there is no alternative but ileostomy. However, antibiotics may take the place of ileostomy in some patients desperately ill with chronic ulcerative colitis.

FALSE POSITIVE TESTS FOR SYPHILIS

A Study of Their Incidence in Sporozoite-Induced Vivax Malaria

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and

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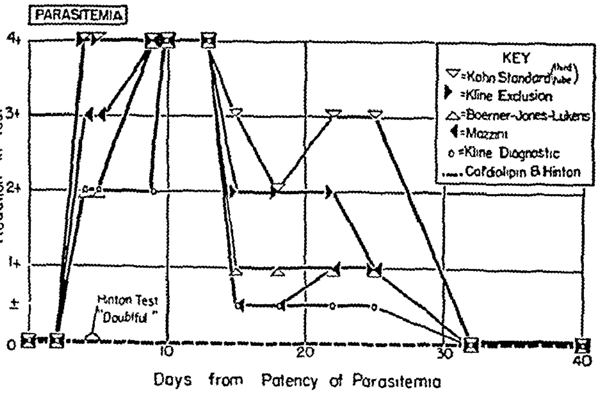
The disease malaria has been well established as one of the conditions which may produce a positive serologic reaction for syphilis in nonsyphilitic persons. Various investigations, however, have yielded data that varies widely as to the incidence of such false positive reactions. Excellent reviews of these studies have been published by Davis [1] and Beerman.[2]



Course of the serum reaction in seven tests for syphilis during an attack (third relapse) of sporozoite-induced vivax (St. Elizabeth strain) malaria.

An opportunity to reinvestigate the problem was afforded us two years ago when the United States Public Health Service initiated experiments concerned with the chemotherapy of sporozoite-induced human malaria. Our primary interest in obtaining specimens of serum from the subjects of these experiments lay in the development of a quantitatively standardized complement fixation test for malaria.[3] However, a concurrent study of the incidence of false positive reactions

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Dr. Mary C. Pangborn of the Division of Laboratories and Research of the New York State Department of Health generously supplied the cardiolipin and purified lecithin used in this study, and Captain Hilfred N. Bossak, Sanitary Corps, Army of the United States, Miss Sara McDearman and Mr. Robert Sanders gave technical assistance.

1. Davis, B. D.: Biologic False Positive Serologic Tests for Syphilis, Medicine **23**: 359-414, 1944.

2. Beerman, H.: Biologic False Positive Reactions to the Tests for Syphilis, Am. J. M. Sc. **209**: 525-542, 1945.

3. Bukantz, S. C.; Kent, J. F., and Rein, C. R.: Studies in Complement Fixation: III. Malaria: the Application of Quantitative Principles in the Optimal Adjustment of Reagents and Test Conditions, to be published.

58

in serologic tests for syphilis was also undertaken in view of the nature and scope of the experiments, which permitted the pretesting of a large group of selected persons before exposure to malarial infection and the examination of serial specimens of serum over extended periods of observation. We are indebted to Dr. G. Robert Coatney and his associates at the National Institute of Health, Bethesda, Md., for making several thousand serum samples available for our combined studies.

MATERIALS AND METHODS

Subjects for the experiments had been selected from male volunteers at the United States Penitentiary, Atlanta, Ga. Only those were enlisted who presented no clinical or anamnestic evidence of syphilis. Specimens of serum were obtained from each person before his inoculation with malaria by mosquito bite, at daily intervals during attacks, two or three times weekly after attacks and at weekly intervals through other periods, the total time of study lasting as long as eighteen months. The serums were preserved in tubes containing dried merthiolate sufficient to give a final concentration of 1.0 mg. per 1 cc. of serum. They were shipped by ordinary mail to the Army Medical School where they were subjected to a battery of serologic tests for syphilis which included the Kahn standard test, the Hinton flocculation test, and the Kline diagnostic, Kline exclusion, Mazzini, and Boerner-Jones-Lukens microflocculation tests. A newly developed microflocculation test[4] employing a cardiolipin antigen was included to determine its specificity in relation to the other procedures. A total of 7,493 serums obtained from 90 persons were examined in this manner; 44,958 serologic tests for syphilis were performed.

RESULTS

The present communication records the results obtained with successive serums from 90 persons. Of these, 80 had been infected with sporozoites of the well documented St. Elizabeth strain and 10 with sporozoites of the Chesson strain of Plasmodium vivax. Two types of primary attack were encountered. Early primary attacks occurred after the usual incubation period in untreated controls and in patients who had received experimental chemotherapy inadequate for suppression. Delayed primary attacks were experienced by subjects who had had a chemotherapeutic regimen adequate for suppression of an early primary attack. After primary attacks the subjects experienced from zero to six relapses.

A false positive reactor was defined as any person who developed a persistent reaction of degree plus-minus or greater after infection with malaria. Fifty-seven (63.3 per cent) of the 90 infected subjects developed such false positive reactions with one or more of the serologic tests at some time during the course of the disease. Forty-nine (61.3 per cent) of the 80 patients infected with the St. Elizabeth strain and 8 (80 per cent) of 10 patients infected with the Chesson strain fell in this group. In view of the small number of subjects infected with the latter strain, the observed difference in the frequency of false positive reactors is not considered to be significant. The relatively high incidence of false positive reactors observed in this study is considered to be due, in large part, to the frequency with which specimens were collected and to the number of tests employed in the serologic battery.

Seropositivity was not encountered in advance of the fever or parasitemia of an attack. False positive reactions appeared, on the average, 8.3 days following patency of the parasitemia, the interval varying in different persons within the limits, zero to thirty days. The observed average interval did not differ significantly in primary attacks and in relapses and appeared to be uninfluenced by the serologic test used. The accompanying illustration shows the course of the false positive reaction after an attack of malaria due to the St. Elizabeth strain of P. vivax. Reactions in this instance appeared four days after a parasitemia became patent. The Kahn standard and Kline exclusion tests showed the strongest nonspecific reactions, whereas the Hinton test yielded doubtful reactions over a two day period only. The mircroflocculation test employing a cardiolipin antigen was negative throughout.

In the great majority of subjects the nonspecific reaction was characteristically transitory and of low degree. False positive reactions which resulted from individual attacks of malaria persisted for intervals varying from a minimum of two to three days to a maximum of ninety-eight days. Reactions which persisted for longer periods were observed in certain instances when successive relapses supervened before the seropositivity due to a preceding attack had subsided. A maximum duration of five hundred and seventeen days was encountered in 1 such instance. It is noteworthy that, in general, the duration of such reac-

Percentage of Persons Developing Positive Reactions in Serologic Tests for Syphilis During the Course of Sporozoite-Induced Vivax Malaria

	Serologic Test for Syphilis																				
	Kahn Standard (Third Tube)			Kline Exclusion			Boerner Jones-Lukens Flocculation			Mazzini Flocculation			Kline Diagnostic			Hinton Flocculation			Cardiolipin Flocculation		
	Persons Tested																				
		Positive			Positive			Positive			Positive			Positive			Positive			Positive	
Type of Attack	No.	No	%	No	No	%	No.	No.	%	No.	No	%	No	No.	%	No.	No.	%	No	No	%
Primary																					
Early ..	15	12	80	20	14	70	20	11	55	20	13	65	20	14	70	19	2	11	1	0	..
Delayed .	44	26	59	45	26	58	21	12	57	45	21	47	45	18	40	45	5	11	25	2	8
Relapse																					
First	59	22	37	59	21	36	46	12	26	59	24	41	59	14	24	59	2	3	14	1	7
Second .	41	6	15	41	11	27	34	9	27	41	7	17	41	4	10	41	0	.	7	0	..
Third	14	5	36	14	4	29	8	2	25	14	3	21	14	2	14	14	2	14	6	0	..
Fourth	6	3	50	6	1	17	3	1	33	6	1	17	6	1	17	6	0	..	4	0	..
Fifth.	2	0	..	2	0	.	..	..	..	2	0	..	2	0	..	2	0	..	2	0	..
Sixth	1	0	..	1	0				..	1	0	.	1	0	.	1	0	..	1	0	

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[4] Rein, C R., and Bossak, H. N: Cardiolipin Antigens in the Serodiagnosis of Syphilis, Am J. Syph, Gonor & Ven Dis 30: 40-46, 1946.

tions was influenced by two factors, (1) the specificity of the test employed and (2) the titer developed by the patient in question.

The determination of the specificity of the different serologic procedures was based on the percentage of patients developing persistent false positive reactions as previously defined herein. Separate analyses were made for each type of primary attack and for relapsing attacks in the order of their occurrence. The data are summarized in the accompanying table.

It will be noted that the incidence of false positive reactors appears highest in early primary malaria, somewhat lower in delayed primary attacks and lowest in relapses. Of the battery of tests employed in this study, the highest percentage of false positive reactors was observed with the Kahn standard test and the lowest with the Hinton flocculation test. The cardiolipin microflocculation test yielded results of exceptional specificity. It should be pointed out that the false positive reactors listed under the latter test in the accompanying table never gave reactions greater than plus-minus, whereas those listed for the Hinton test gave reactions ranging from doubtful to positive. The exceptional specificity of the Hinton flocculation and cardiolipin microflocculation tests is striking in view of their recognized high sensitivity in the serodiagnosis of syphilis.

SUMMARY AND CONCLUSIONS

In a controlled study of sporozoite-induced vivax malaria, a series of 7,493 serums obtained at suitable intervals from 90 nonsyphilitic volunteers were subjected to a battery of 7 serodiagnostic tests for syphilis; 44,958 tests were performed.

Fifty-seven (63.3 per cent) of the 90 infected subjects developed false positive reactions with one or more tests during the course of the disease.

The Hinton flocculation test and a microflocculation test employing a cardiolipin antigen yielded results of high specificity.

ABSTRACT OF DISCUSSION

DR. CHARLES R. REIN, New York: Dr. Giordano asked whether a complement fixation test was performed on these specimens. I should like to report that Captain Kent subjected most of these serums to several complement fixation procedures including the Kolmer test. The incidence of false positive eactions for syphilis was about the same as that obtained with ome of our flocculation tests.

At the Army Separation Centers some soldiers were found to have positive serologic reactions for syphilis without any clinical or anamnestic evidence of the disease. Many of these nonspecific or nonsyphilitic reactions were due to a malarial infection. We were able to subject the serums from some of these persons to a battery of serodiagnostic tests, including our new microflocculation procedure which employs a cardiolipin antigen. The characteristic serologic pattern obtained with such serums was a negative reaction with the cardiolipin test and doubtful or positive reactions with the other routine flocculation or complement fixation tests. In fact, whenever such a serologic pattern was obtained in our routine consultation cases, malaria was suspected and often proved to be the cause of the false positive reactions.

DR. BENJAMIN KLINE, Cleveland: Dr. Rein gave me some knowledge of his work with cardiolipin antigen, and the results in a series of 270 serums obtained from Crile Hospital bear out his findings. I had that number of serums in a series of some 9,500 covering general hospital and ambulatory cases, and a series of 650 serums in cases of unquestionable syphilis under treatment with penicillin. I have found in a comparison of present day standard antigens at their optimal concentration in one simple test, the flocculation slide test, that cardiolipin antigen can be set at a ratio that will give results as sensitive as those with Eagle and Mazzini antigens, for instance, and give more sensitive results than the Hinton, the Kahn and the Kline antigens. It is much more specific than any of the present day antigens. For instance, in the most important group, the malaria group, I found that whereas the tests with standard antigens averaged about 17 per cent false positive reactions, those with cardiolipin antigen varied from 1 to less than 2 per cent nonspecific reactions. In the state of Ohio physicians are reporting the results of tests with cardiolipin antigen and making it possible for young men returned from service, with no evidence of syphilis, to get married on the basis of the results with this remarkable, new antigen for syphilis.

DR. ALFRED S. GIORDANO, South Bend, Ind.: I wish to concur in the opinion expressed today on the specificity of the cardiolipin antigen in avoiding many of the false positive reactions. In my experience, while making this comparative study I was rather shocked to discover that, in addition to malaria and the other well known conditions in which false positive reactions have been found, there exists a high incidence of false positive Mazzini reactions in pregnancy and sepsis, particularly those associated with renal disease. This incidence is uncomfortably high, and the probable reason it hasn't come out is that in the national conferences such specimens were not included in the studies. In hospital practice, at least, these false positive reactions are frequently misinterpreted, and it is well to bear this fact in mind. With the return of the men from service, I have been aware of the false positive reactions of malaria, and whenever such reactions have been noted I have consulted with the physician, calling to his attention that in all probability the reaction was false and the patient should not be treated for syphilis.

PILONIDAL DISEASE—PRESENT STATUS OF MANAGEMENT

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and
JACK G. KERR, M.D.
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General agreement has been reached concerning the mechanics involved in the embryonal development of the various postanal cysts and sinuses usually grouped under the general term "pilonidal disease." The theory that these are due to epithelial sequestration has taken complete precedence over all previous suggestions linking the condition with preen glands or medullary outgrowths. There is no such unanimity, however, in regard to the proper surgical treatment, and the purpose of this paper is to summarize and review present opinion on this moot subject.

It has often been said that wars offer an opportunity for mass experimentation in the management of disease, and this has been especially true during World War II in relation to pilonidal disease. Thousands of patients have been operated on by various technics with emphasis on closed surgical procedures. In the last few years a number of articles on the subject, almost entirely from military sources, have appeared in medical literature.

In general, a comparison of the articles published during recent years with earlier writings on this subject impresses one with the apparent acceptance of two major premises. One, that trauma, while unrelated to etiology, is a factor in the development of clinical symptoms; and second, that surgical intervention is the treatment of choice. In no report on the experiences

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gained during military service have we seen advocated, as a method of eradication of the disease process, any of the several ambulatory methods described earlier. Also, the thesis is developed that military requisites demand a method of treatment that rehabilitates and returns a soldier to military duty as quickly as possible, since there is little space available for prolonged hospitalization and no provision for extended convalescence. Hence the procedures acceptable in civilian practice, such as block excision and allowing the resultant wound to heal by granulation during an extended ambulatory period, had to be supplanted if at all possible. With this objective certainly any one would agree. However, this criterion, as it relates to the time required for postoperative healing, has never demanded the attention that it did in military circles, since most civilian patients are allowed to resume their usual activities ten to fourteen days after block excision and open packing, whereas a soldier with an unhealed wound must be a hospital patient. This point is brought out in almost every report of war time experience, with the resultant emphasis being given to a method of handling the wound, both preoperatively and postoperatively, that lessens the duration of morbidity, allowing the percentage of "cures" to fall where it may.

Of course few, if any, of the recently advocated methods of dealing with the condition are new in their entirety. Many reviews prior to the war era have discussed various methods of complete excision followed by primary closure of the wound with and without drainage, excision with partial closure of the wound, excision followed by open packing of the wound, partial excision of the cyst wall with marsupialization as described by Buie[1] and various plastic procedures utilizing additional cutaneous incisions as described by Lahey.[2] Based on rates of recurrence only, opinion prior to the war was definite that some type of open operation was far superior to any type of closed procedure. Kleckner[3] substantiated this in 1936 when, after a poll of many proctologists, he found that open operation performed on 4,231 patients yielded a recurrence rate of 1.3 per cent, while this rate was 23.29 per cent after operations with primary closure of the wound.

Rogers,[4] reporting in 1933 on 119 cases of pilonidal sinus from the Massachusetts General Hospital during the years 1924 to 1931, found the incidence of recurrence to be: 36 per cent when primary suture of the wound was performed; 50 per cent in partially closed wounds, and 18 per cent if the wound was left open following excision. Subsequently, Rogers and Dwight[5] reported only 2 failures in 140 cases in which open packing of the wound was employed. Further, they advanced the conclusion that the cause of failure was usually not incomplete removal of the sinus epithelium but, rather, the newly formed epithelium in the process of faulty healing.

Swenson, Harkins and Groesbeck,[6] following Rogers' technic of open packing, reported 2 failures in 32 cases, with an average healing time of 14.4 weeks. They also emphasized the importance of close observation during the entire postoperative period and in particular during the final weeks.

The foregoing reports, while by no means exhaustive, do represent a fair estimate of the preponderance of opinion in favor of the so-called open operation, as it was expressed prior to the more recent military experiences. From these it will be noted that little emphasis was placed on the necessity for a reduction of the time required for the postoperative healing of the wounds, but stress was given to the ultimate complete recovery of the patient after some period of follow-up. In contrast, practically all the reports by medical officers on their experience while in service favor and advocate some attempt at closure; these recommendations appear to be approximately equally divided between methods of partial closure and complete primary suturing of the wound.

Brockbank and Floyd,[7] advocating marsupialization, expressed the belief, after their observation of 168 consecutive cases of pilonidal disease, that 90 per cent of patients can be returned to duty, completely healed, in twenty-one to twenty-eight days.

Coffey[8] has reported handling 50 cases by the same method without recurrences. He employed this method in 6 cases while in service on a battleship, with an average of twenty-one days lost from duty.

Mutschmann and Mitchell[9] stated that in their experience primary closure did not prove satisfactory and open packing required too long a period of healing. They advocated allowing acute infection, if present, to subside after adequate drainage; then, after block excision, the skin edges should be sutured to the sacrococcygeal fascia, leaving the skin edges apart without tension.

A somewhat radical departure from the common custom of performing surgical intervention aiming at cure only after the complete subsidence of the acute inflammatory process, is that advocated by Peterson and Ames.[10] They employed a method of marsupialization with no period of preoperative preparation, operating on patients with acute cases of the disease even in the presence of heavy infection. The edges of the skin are sutured to the edges of the cyst wall with steel wire, which is removed in seventy-two hours. They have reported the treatment of 75 to 100 patients with an average time on the hospital ship of between three and four weeks.

Striking among the reports are some that advocate complete excision of the disease process followed by complete primary closure of the wound. Formerly, this type of procedure led to many failures of primary union of the wound as well as to subsequent draining sinuses and recurrent abscesses, which, as some have suggested, may have infrequently been the result of incomplete removal of cyst epithelium, but rather were due to lack of the attention apparently necessary for the success of this procedure. Woldenberg and Sharpe[11] reported 100 consecutive patients from an Army hospital who were treated by excision and primary closure. Eighty per cent had draining sinuses on admission. The incidence of recurrence in these cases was 2 per cent with an average time of healing of 21.5 days and a return to full military duty in an average of 28 days.

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[1] Buie, L. A.: Practical Proctology, Philadelphia, W. B. Saunders Company, 1938, pp. 480-482.

[2] Lahey, F. H.: An Operation for Pilonidal Sinus, Surg., Gynec. & Obst. **48**: 109-111 (Jan.) 1929.

[3] Kleckner, M. S.: Pilonidal Sinus: Its Surgical Management, Tr. Am. Proct. Soc. **37**: 166-173, 1936.

[4] Rogers, H.: Pilonidal Sinus, Surg., Gynec. & Obst. **54**: 803-810 (Dec.) 1933.

[5] Rogers, H., and Dwight, R. W.: Pilonidal Sinus, Ann. Surg. **107**: 400-418 (March) 1938.

[6] Swenson, S. A.; Harkins, H. N., and Groesbeck, H. P.: Pilonidal us, Am. J. Surg. **66**: 49-57 (Oct.) 1944.

[7] Brockbank, M. J., and Floyd, J. R.: Pilonidal Cyst, Am. J. Surg. **68**: 77-79 (April). 1945.

[8] Coffey, R. J.: Marsupialization of Pilonidal Cyst, U. S. Nav. M. Bull. **42**: 1326-1329 (June) 1944.

[9] Mutschmann, P. N., and Mitchell, G. A.: A Treatment of Pilonidal Cysts and Sinuses, J. A. M. A. **124**: 30-31 (Jan. 1) 1944.

[10] Peterson, P., and Ames, R. H.: Pilonidal Sinuses and Cysts, Am. J. Surg. **65**: 384-390 (Sept.) 1944.

[11] Woldenberg, S. C., and Sharpe, W. S.: Surgical Treatment of Pilonidal Cysts, Surg., Gynec. & Obst. **76**: 164-170 (Feb.) 1943.

Shute, Smith, Levine and Burch[12] reported 59 cases in which complete closure of the postoperative wound resulted in complete primary healing in an average of eight days in 48 instances. There were postoperative complications in the remaining 11 cases, but these healed in an average of twenty-two days. Eleven days was the average healing time of the entire series of 59 patients.

Byrne[13] has reported that 20 of 23 patients treated by excision and complete suture of the wound had primary healing in seventeen days. The average time of healing was sixteen days; the longest time required for completion of healing was thirty days.

Bartlett[14] has strongly advocated primary closure, stating that methods of partial closure, such as marsupialization and suture of the skin to the sacrococcygeal fascia, require far longer periods of healing than do successful primary closures. If these methods are to be taken as routine forms of treatment it is necessary to assume, according to Bartlett, that: (1) there is no practical alternative to prolonged disability in order to assure cure; (2) the final result will be satisfactory in a high percentage of cases after such procedures, and (3) excision and primary closure, while ideal, cannot be accomplished with great regularity. In his report he has based his opinion on 20 cases with complete suture of the wound, 18 of which healed primarily.

Alley and Richey[15] reported 86 closed operations, in which all but 5 wounds healed by primary union. The period of hospitalization was prolonged in these 5 cases to an average of fifty-four days; however, the average number of postoperative days for the entire group was 26.5 days, including those with delayed healing time. Further, Alley and Richey reported that from a total of 85 operations for pilonidal disease, they were able to close 78 by primary suture.

Larkin,[16] in perhaps the most recent report of a large number of cases of pilonidal disease, based on experience while in military service, reported complete healing in seven days postoperatively in 90.9 per cent of 66 cases in which no previous surgical intervention had been performed. In 21 cases in which previous surgery had been done, 71 per cent only had primary healing. The average healing time in his series of cases was 26.5 days.

To supplement the published literature on this subject and to obtain the considered opinion of a group of proctologists whose work before the war included surgical experience in the management of pilonidal disease capable of serving as a basis of comparison with their own military observation, a questionnaire was addressed to thirty-five rectal surgeons who served in World War II. A brief expression was requested on present opinion in regard to the open or closed type of procedure in civilian practice together with any preference for a special technic in either case.

As has been stated, military and civilian surgeons are influenced by varied considerations, including regulations as to hospital stay and the type of duty to which the patient must be returned after discharge from the hospital. It was for this reason that nonmilitary conditions were specified in the questionnaire, and the questions were designed to secure the considered reactions of those who for the most part have now returned to private practice.

Twenty-seven answers were received; some of those who did not submit replies stated that their military service failed to include proper experience in this connection. Twenty-one of those who replied (77.7 per cent) now regard the open type of operation as the best standard procedure under the conditions stipulated. Five (18.5 per cent) believe that various closed procedures which were developed in military service will be routinely satisfactory in private practice, and one, Dr. Robert A. Scarborough,[17] while stating that "Block excision with primary closure is the procedure of choice," sets up certain exacting criteria, in the absence of which he prefers open excision with immediate skin grafting.

A few of those who favor the open type of operation still feel that a return to routine classical complete excision of the lesion associated with saucerizing of the wound and few if any sutures is desirable. Those who take this position[18] feel that while primary closure may have been justifiable in soldier personnel in order to return those whose wounds healed to duty as quickly as possible, the results were not uniformly satisfactory, the published reports did not always include sufficiently lengthy follow-up statistics and the classical procedure is dependable as to freedom from recurrence and will be satisfactory in civilian practice. A number of those who favor open procedures for the majority of cases have become convinced, however, that under certain specified conditions the wound may well be closed at the time of operative intervention. Dr. Neil W. Swinton,[17] for example, believes that for the clean pilonidal sinus in the midline in an intelligent patient who is willing to spend twelve days in the hospital, excision and primary closure is justifiable; and Dr. Tom E. Smith,[17] while also convinced that the open operation is the only surgical procedure which can be used without fear of recurrence of symptoms, states that if the last episode of infection has occurred at least six months before the operative intervention the surgical technic devised by Shute[12] will frequently be satisfactory. Several other answers[19] stress conclusions that various closed procedures, while ideal from the theoretic point of view were disappointing in cases in which any remnant of infection was present, which may explain the sweeping "directives" which finally prohibited radical procedures in several of the hospital services. In cases of this type the wounds appeared to have been well healed but shortly after the discharge of the patient from the hospital they separated because of the fact that healing beneath the skin surfaces was not secure. For that reason this group[19] would restrict the closed type of operation to a few selected cases.

A surprisingly large number of answers expressed satisfaction with the open procedure by which the lesion is marsupialized. Several[20] used the technic devised by Buie.[1] Swinton[17] incises the involved area with an electrosurgical unit removing a minimum amount of skin and lays open the underlying sinus tract, after which the wound is packed with petrolatum gauze; Dr. John C. M. Brust[17] opens the cyst, scrubs the bases with gauze, exposes all tracts and bevels the wound. No sutures are used, and the wound is packed with dry gauze under pressure. Those who have adopted marsupialization certify that the wounds heal by granulation with few complications and that a minimum of cicatrix remains. Dr. Raymond L. Murdoch[17] destroys the lining of the tract superficially.

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[12] Shute, F. C., Jr.; Smith, T. E.; Levine, M., and Burch, J. C.: Pilonidal Cysts and Sinuses, Ann. Surg. **118**: 706-716 (Oct.) 1943.

[13] Byrne, R. V.: Pilonidal Cyst, U. S. Nav. M. Bull. **42**: 386-390 (Feb.) 1944.

[14] Bartlett, W., Jr.: Pilonidal Cyst and Sinus, Surg., Gynec. & Obst. **80**: 69-74 (Jan.) 1945.

[15] Alley, R. C., and Richey, C. O.: Pilonidal Cyst, Mil. Surgeon **96**: 422-423 (May) 1945.

[16] Larkin, L. C.: Pilonidal Cyst, Surg., Gynec. & Obst. **82**: 694-704 (June) 1946.

[17] Personal communication to the authors.

[18] Burr, Harry B.; Zimmerman, Karl; LeFevre, Harry W., Jr.; Charles, John D.; Lescale, Maurice, and Green, W. W.: Personal communications to the authors.

[19] Holoman, M. Browne; Reuther, T. F.; Turell, Robert; Wotherspoon, Gordon; Susnow, David A., and Cullen, P. K.: Personal communications to the authors.

[20] Terrell, Robert V.; Brown, L. E.; Stockman, J. Milton; Ross, Stuart T., and Nesselrod, J. Peerman: Personal communications to the authors.

Dr. Charles E. Pope[17] has devised a new procedure featuring a sliding gluteus maximus muscle graft by which the avascular fascial plane is covered and dead space is obliterated; he favors a closed procedure in all cases if this is done. Dr. Lester J. Johnson[17] completely excises all tracts, loosens the gluteal fascia to permit approximation without tension and uses wire for all sutures. Dr. Rufus C. Alley[17] is strongly committed to excision and primary closure in suitable cases but believes that the simplest operation is the most satisfactory. He does not favor undercutting or buried sutures, and the closure is done with stainless steel wire. Drs. Victor C. Tucker[17] and Clyde L. Wilson[17] also prefer primary closure after infection clears.

COMMENT

From these reports it is readily seen that those who advocate primary complete closure of wounds after the excision of pilonidal cysts and sinuses make a strong point in their favor. They demonstrate beyond any question that many man days can be saved during the convalescent period. On this basis, certainly, the procedure can be justified so far as it applies to the armed forces and in all probability would have far more advocates among those doing civilian practice, if, as in the Army and Navy, patients were not permitted to resume their normal activity but were obliged to remain hospitalized until healing of the wound was complete. This perhaps would be true even at the expense of an added risk of "recurrence" as compared with the so-called open operation.

The incidence of poorly healed wounds, as reported by those advocates of primary closure cited herein, compares most favorably with many reports of preference for the more conservative approach of excision and open packing.

As Barnett[21] stated, military requisites being as they are, the recently developed technics of excision and primary closure of selected cases offer the best solution to the problem; but the more conservative method of excision and open packing is indicated in many cases not amenable to radical surgical intervention and is the procedure of choice in civilian practice.

One should not pass from a discussion of the closed procedure without emphasizing a point repeatedly cited by adherents of primary closure. Success is wholly dependent on fundamental surgical principles, including complete obliteration of all dead space, meticulous hemostasis and sufficient mobilization of tissue to avoid tension on sutures. In regard to other points of technic, such as the type of suture material, the use of sulfonamide preparations and penicillin and the employment of pressure dressings, some leeway would seem permissible. As suture material, fine catgut, cotton and stainless steel wire each has its advocates.

The local application of a sulfanilamide drug is commonly employed, although the comments of Burch[12] and associates regarding its use are interesting. In their first 29 cases a buffered sulfanilamide was used which seemed to cause oozing and the accumulation of serum in the wounds. Nine of their 11 complications were in this group.

Our own civilian experience with an operation including complete excision of diseased tissue, no sutures except (in larger wounds) a simple inversion of the skin edges and a rubber covered pack has been sufficiently satisfactory that we have not heretofore been tempted to adopt closed procedures. Within the past eighteen months, for example, our own patients on this type of surgical management have spent an average of six days in the hospital, have been away from work an average of fifteen days, and have had all wounds healed firmly and without recurrence in an average period of six weeks and one day.

It would be unwise, however, to neglect fair consideration of the studies which have been made by military surgeons, and these definitely indicate that there will be a place in civilian practice for marsupialization and for the reconstructive primary closure of pilonidal wounds when properly indicated and properly performed.

710 Medical Arts Building.

ABSTRACT OF DISCUSSION

Dr. Walter A. Fansler, Minneapolis: Since I saw numerous recurrences of pilonidal disease in patients operated on by the closed method in both the Army and Navy, I am more than ever convinced that operation by any closed method should be limited to a small number of patients. This paper demonstrates the fact that there is no unanimity of opinion as to what is the best type of operation. There has been a rash of papers, as Dr. Rosser pointed out, on pilonidal disease, and a great many of them were published, of course, by men in the armed forces. I do not believe that there has been too much contributed by these papers in the way of permanent conclusions concerning pilonidal disease. In most instances an insufficient time has elapsed following the operations before the papers were published. It takes months to be sure of the results after an operation for pilonidal disease, and in isolated instances there may be recurrence years later. This time lack was, of course, unavoidable under existing circumstances. Many of the soldiers and sailors were transferred to other camps or to active duty elsewhere, or the medical officer was transferred. I am convinced, particularly in civilian practice, that, primary closure is seldom to the best advantage of the patient. The hospital time and expense, the period of disability, the loss of time from work and the chances of recurrence are all far greater than where the open method is used. By the open method, with proper regard for a few fundamental principles and proper postoperative supervision, cure without further surgical intervention will almost uniformly result. That healing time is longer is not denied, but hospitalization and actual loss of time from occupation is less. There are but three fundamental causes of failure to cure this disease by the open type of operation: (1) failure to remove all of the tract; (2) failure to leave the right type of wound for healing, and (3) improper attention to postoperative care. The wound which is left must be flat. If a deep, well-like wound with steep sides is left, failure will result in many cases. In thin persons the wound is naturally flat. I think most of us have observed that the difficulty in healing occurs usually in fat people who have a deeper intergluteal fold or cleft. In them this flattened condition must be produced surgically. This is accomplished by removing a generous wedge of fat from both the sides and the ends of the incision. I emphasize at the end of the incision, because that is often not done. Laterally it is often necessary to denude the fat down to the gluteal muscles. No skin should be removed other than the diseased margins

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21. Barnett, L. A.: Pilonidal Cyst, Am. J. Surg. 64: 338-345 (June) 1944.

about the openings of the sinus. After the fat has been removed the resultant skin flap is brought toward the base of the wound and stitched to the fascia covering the sacrum. This can be done by either continuous or interrupted sutures. The sutures are placed as near the midline as possible, without making undue tension on the skin flaps. This leaves but a narrow wound to heal by granulation. A pressure dressing is applied to hold the flaps in close apposition to the underlying tissues and to aid in preventing the formation of hematoma. The recent suggestion of Larkin, as to the use of a sponge rubber pad for this purpose seems excellent. In the postoperative care two conditions must be guarded against. The wound must not be allowed to bridge over too quickly. Since the wound is flat, rather than deep and trenchlike, the prevention of this condition is seldom much of a problem. Second, there may be a tendency at the ends of the wound for the skin to heal too rapidly. This produces a small pocket, and if this occurs the skin must be snipped longitudinally; otherwise healing may be delayed or a small sinus may result. This complication can often be prevented if, at the time of operative intervention, a small triangular section of skin is removed at either end of the incision.

Clinical Notes, Suggestions and New Instruments

TETANY FOLLOWING MERCURIAL DIURESIS

FRANK A. MARSHALL, M.D.
Weehawken, N. J.

Carpopedal spasm, which results from a lowering of blood calcium incident on diuresis following repeated administration of mercurial diuretics over a long period, has not been specifically reported in American medical literature. Such a possibility has been strongly suggested recently in a reply in The Journal of the American Medical Association to a query[1] on "Muscle Cramps Following Mercurial Diuretics." The subject is dismissed with the notation that "at times, loss of calcium in the urine may be excessive and a trial of calcium gluconate, intramuscularly or intravenously, shortly before the diuresis is initiated may be effective."

Several reports of cases have appeared on this subject in foreign medical literature. The case of Pavel and others[2] closely parallels the present one. Both patients were subject to long continued and repeated injections. In both cases blood calcium was approximately 7 mg. per hundred cubic centimeters after injection.

In the second case occurring abroad,[3] Sendel reports a fatal issue in an edematous Hindu infected with ancylostoma. Typical carpopedal spasm and laryngismus developed immediately after the injection, despite the use of 2 cc. of colloidal calcium and the oral administration of 2 Gm. of ammonium chloride two hours previously. Five minutes after injection of the mercurial (Neptal, an addition product of mercury acetate and salicylaminoallylacetic acid) the patient expired. This case differs from Pavel's and the appended one in the time elapsing after the injection. Time for diuresis was not available; hence, the effect of a massive outflow could not have been causative in Sendel's patient, who died following his second injection of a mercurial. Malnutrition and chronic hookworm infestation may have contributed to this explosive fatal result. This case may explain one of the modes of exitus following injection of these mercurials.

Nothmann[4] observed a lowering of serum calcium in some cases in 1933.

The emphasis in American literature[5] has been on the loss of chlorides (10 per cent or more of serum chlorides) with the use of ammonium chloride as the therapeutic agent. Muscular cramps are referred to as "similar to heat cramps," which may be in error if closer examination of the patient is made. The present patient referred to her pains as "cramps" when she was observed with typical carpopedal spasm.

REPORT OF CASE

History.—Mrs. E. K., a moderately obese woman aged 60, was seen in her home over a period of five months for congestive failure, hypertensive heart disease and emphysema. On May 17, 1946 she appeared flushed, cyanotic and dyspneic, with a blood pressure of 200 systolic and 96 diastolic; the pulse rate was 85. Significant past history revealed that a thyroidectomy had been performed in Switzerland in 1931 for a probable substernal goiter, as the patient "couldn't catch breath" prior to the operation because the mass "squeezed on breathing pipe." She was treated in 1935 for bronchial asthma and hypertension. To secure relief from dyspnea, she sojourned to Arizona in 1935. In 1943 the first mercurial was injected. These intramuscular injections now total over two hundred. As a result, both buttocks are considerably indurated. When a needle is inserted into them, the fibrous, hard nature of the subcutaneous and muscular tissue can be noted. Veins in her arms are not palpable or visible, partly as a result of obesity and partly from previous attempts to give intravenous medication (theophylline ethylenediamine, epinephrine and the like). Tetany was never experienced following thyroidectomy.

Physical Examination.—Physical examination reveals an extremely hypersensitive patient who readily jumps when touched. The scar of the previous thyroidectomy is barely visible. Thyroid masses are not observed. The veins of the neck are distended, even in a semiupright position.

The skin, particularly that of the neck, is flushed and cyanotic. The lungs are emphysematous. There are dulness and diminished breathing posteriorly at the base of the right lung. Wheezing is heard anteriorly over the chest on both sides.

The apex beat is not felt, but heart sounds are best heard in the axilla, where they sound muffled. The rhythm is regular with a rate of 85 per minute. Adventitious sounds are not heard. In the abdomen, shifting dulness is not noted. The liver is enlarged to six fingerbreadths below the costal margin, which is tender yet smooth. Sacral pitting edema (++) and dependent edema (+++) over both legs is present. The eyes are flushed. Retinal sclerosis is present. The disks are normal. Neither hemorrhage nor exudate is noted.

Laboratory Data.—Laboratory reports are as follows: Urinalysis indicated 3 plus albumin; reaction acid; specific gravity 1.026; white blood cells 1 plus; red blood cells 2 plus, and epithelial cells 3 plus. The rest of the urinalysis is within normal limits.

Examination of the blood reveals: sugar 125 mg., creatinin 1.8 mg., nonprotein nitrogen 35.5 mg., urea 16.1 mg., calcium (April 24, 1946) 7.4 mg. and phosphorus 5.5 mg. per hundred cubic centimeters.

Electrocardiographic tracings indicate that the P_1 is isoelectric, the P_2 and P_3 inverted, the PR interval 0.16 second, the QRS complex 0.07 second, the QT interval 0.40 second, with an auricular and ventricular rate of 80 per minute. The T waves in leads 1, 2 and CF_4 are inverted. The CF_2 lead has a diphasic T wave. The QRS complexes in leads 1, 2 and 3 are slurred. The ST_1 interval is depressed 1.5 mm.

Present History.—The patient has been digitalized and continued on maintenance doses of digitoxin with 0.4 mg. on one day and 0.2 mg. on the next. Theophylline ethylenediamine, phenobarbital and pentobarbital sodium have been given as required. Insomnia is one outstanding complaint. One evening the patient took 9 grains (0.58 Gm.) of Seconal sodium without any benefit. Recurrent episodes of congestive failure and nocturnal dyspnea have been frequent for the past five months, responding only partially to treatment. An annoying symptom has been vomiting, which occurs in spells. Mercurial diuretics (mersalyl and mercurophylline injection chiefly) have been given at intervals of three to ten days as required by edema and congestive failure.

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[1] Muscle Cramps Following Mercurial Diuretics, Queries and Minor Notes, J. A. M. A. **131:** 1104 (July 27) 1946.

[2] Pavel, I.; Pavenesco Podeano, A., and Tanasesco, G.: Tetany and Hypocalcemia Following the Long Repeated Administration of Mercurial Diuretics, Compt. rend. Cong. franç. de méd. **24:** 90, 1937.

[3] Sendel, D. O.: Death in Tetany Following Intravenous Mercurial Diuretics, J. Christian M. A. **19:** 109 (May) 1944.

[4] Nothmann, M. M.: Klin. Wchnschr. **12:** 159 (Jan. 28) 1933.

[5] Cattell, McK., in Treatment of Edema by Drugs, Conferences on Therapy, New York State J. Med. **44:** 280 (Feb. 1) 1944. Footnote 1.

Tetany Episode.—On April 18, 19 and 20, vomiting was in abeyance. On April 21, the patient vomited slightly at 5 a. m. following the ingestion of 15 grains (0.97 Gm.) of enteric coated ammonium chloride. On Monday, April 22, she appeared better than usual, without extraordinary presenting symptoms or signs except edema (++++) of the legs. Mercurophylline, 1 cc. (Mercupurin) was injected at 10:15 a. m. into the left buttock intramuscularly. At 11:15 a. m., and prior to diuresis, the patient felt a "tightening" in her toes. A large quantity of urine (quarts—but she failed to measure amounts) was passed between 2 and 5 p. m. Spasms in the feet, severe by now, increased considerably in intensity. When I was summoned to see the patient at her home at 9:25 p. m., somewhat less than twelve hours following the injection, typical tetany was present with carpopedal spasm distinctly evident bilaterally. Adducted thumbs could be abducted only with considerable effort and with pain to the patient. Severe cramps and spasms in the leg muscles, in addition to flexion of the toes, were present. Laryngospasm and diffuse abdominal pain were evident. The Chvostek sign could not be elicited. Extreme hyperexcitability of the neuromuscular system was noted; muscular spasmodic contractions resulted on merely touching the patient lightly.

Calcium gluconate, 10 cc. of a 10 per cent solution, was administered intramuscularly. Orally, ten wafers, each containing dicalcium phosphate (9 grains, or 0.58 Gm.), calcium gluconate (6 grains, or 0.39 Gm.) and vitamin D (666 units), were given as soon as the patient could swallow them. Morphine sulfate (¼ grain, or 0.015 Gm.) was given to alleviate pain and restlessness.

On the following day, April 23, the administration of 10 cc. of 10 per cent calcium gluconate (1.3 grains, or 0.08 Gm.) was repeated by intramuscular injection both in the morning and in the evening. Tetany was subsiding by the next morning and disappeared by that evening. Ill effects from the parenteral administration of calcium were not observed, in spite of digitalization. The electrocardiogram had shown typical ST deviation characteristic of the action of digitalis.

On April 24, in spite of the ingestion of calcium wafers and the use of parenteral calcium to relieve tetany, the blood serum calcium was only 7.4 mg. but the serum phosphorus was 5.5 mg. per hundred cubic centimeters. The blood pressure was now 198 systolic and 96 diastolic, as compared with 214 systolic and 120 diastolic on the previous day.

On April 29, recurring edema and clinical interest suggested another trial with a mercurial diuretic. A solution of 1 cc. of mersalyl theophylline (0.1 Gm. mersalyl and 0.05 Gm. theophylline) was injected into the right buttock at 11 a. m. Vomiting had not occurred for several days previously, nor was there any dyspnea. Four quarts (3,785 cc.) of urine were passed after the injection. At 9 p. m. the patient noticed spasms (cramps) in her feet which lasted throughout the night. She ingested calcium wafers at 10 p. m. She stated that considerable relief was experienced on gently rubbing the calves of the legs with alcohol.

On May 7 at 11 a. m., injection of 1 cc. of mersalyl and theophylline was repeated because of edema of the legs and other signs of congestive failure. Three quarts (2,839 cc.) of urine were passed. At 11 p. m. tingling of the fingers, tensing of the toes and severe cramp in the muscles of the right calf, which was felt by the examiner, was relieved by the ingestion of five wafers of dicalcium phosphate and calcium gluconate, the injection of morphine and the application of alcohol to the legs.

Subsequent injections of mercurials have not produced any definite signs of tetany. The patient continues on milk and takes her wafers of calcium as she pleases. She is hyperexcitable and jumps readily when touched.

COMMENT

The occurrence of evidences of tetany on three separate occasions in this patient following the parenteral use of mercurial diuretics stresses the need for thought on the mobilization and excretion of electrolytes other than the chlorides, although the latter continues to be among the most important. Gratifying relief in this case was obtained through the use of parenteral and oral calcium. Blood calcium levels were reduced following the attack to about the same level as that reported abroad in another case. It appears that tetany is more likely in patients who may ordinarily have a borderline deficiency, which is further reduced below this critical level by excessive diuresis.

The use of parenteral and oral calcium in moderate doses lacked deleterious effects in this fully digitalized patient.

On the occasion of the first tetany reaction, it was observed that this patient had signs of tetany prior to the excessive diuresis. Sendel's patient, who died five minutes after receiving an intravenous injection of a mercurial, displayed signs of tetany without any preceding diuresis. These observations suggest some mechanism other than profuse diuresis as a cause for electrolyte imbalance. Possibly the normal interstitial fluid and its electrolytes surrounding the muscle fibers, including cardiac muscle, are mobilized and reduced too rapidly, causing symptoms.

CONCLUSION

1. Tetany that followed the injection of diuretic mercurials and recurred on three separate occasions was relieved by the administration of calcium. The patient showed a low blood calcium level.

2. Over two hundred injections have been given to date in a period of three years to this patient.

3. Signs of electrolyte imbalance may be in evidence prior to diuresis. Some mechanism other than the diuresis is probably operative.

Council on Physical Medicine

The Council on Physical Medicine has authorized publication of the following report. Howard A. Carter, *Secretary.*

EASTMAN RADIANT ENERGY LAMPS ACCEPTABLE

Manufacturer: The J. H. Eastman Company, 1304 Harper Avenue, Detroit 11.

The Eastman Radiant Energy Lamps, models 260 and 375, are infra-red generators. The lamps may be used for administering local radiant heat for therapeutic purposes. According to the firm, the power required for model 260 lamp, serial #535, at 120 volts is 260 watts and for the model 375, serial #415, at 120 volts is 375 watts.

The firm submitted a report demonstrating the ability of the Eastman Radiant Energy Lamps, models 260 and 375, to produce "deep heat." The technical procedure used in making the tests was that recommended by the Council on Physical Medicine of the American Medical Association (The Journal, April 20, 1935, p. 1413) for obtaining the temperature rise in deep muscle tissue. The result obtained when using either model showed that 0.8 degree F. was the average temperature rise in the deep tissues of the thigh with twenty minute applications. Blistering was noted on the second heat application in the series of tests. Precautions should be taken against overheating and the lamp-skin distance adjusted accordingly. By using special filters the firm claims that the long wave infra-red rays are filtered out. Experimental data supplied by the promoter fails to substantiate this statement.

While the apparatus is acceptable as a source of infra-red radiation for local heat, the firm has not shown that the lamps are more efficacious therapeutically than a conventional infra-red lamp equipped with an ordinary tungsten filament bulb.

The Council voted to include the Eastman Radiant Energy Lamps, models 260 and 375, in its list of accepted devices.

Council on Pharmacy and Chemistry

REPORT OF THE COUNCIL

The Council has authorized publication of the following report.

AUSTIN SMITH, M.D., *Secretary.*

STATUS REPORT ON OINTMENTS CONTAINING ESTROGENIC SUBSTANCES

A drug manufacturer recently submitted to the Council a cream the chief active constituent of which was an estrogen. The product as marketed by the firm concerned was to be sold only on prescription. The use of such preparations has been the subject of considerable investigation, but on the basis of the existing evidence it would seem that there is need for much more work before this technic of application of an estrogenic substance can be generally adopted. The effective dosage obtained following the topical application of an estrogenic substance would be highly unpredictable owing to differences in absorption through the skin. There does not yet seem to be available data that would justify a belief that the local administration of estrogenic substances may be as satisfactory as other routes of administration.

From time to time there appear reports of the misuse of such preparations, especially when they fall into the hands of individuals unqualified to judge the needs of their bodies. When such possibility, or probability, exists the packages containing such preparations should bear adequate warning of the dangers involved in their use. The Council has previously published a report on cosmetics containing hormones (THE JOURNAL, June 16, 1945, p. 515) and has pointed out some harmful possibilities that may exist. Until more evidence is accumulated, the Council is of the opinion that the use of creams or ointments containing estrogenic substances seems unpromising on the basis of present available data and should be reserved for those qualified to evaluate properly the results that may be obtained following the use of such preparations.

NEW AND NONOFFICIAL REMEDIES

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.

AUSTIN SMITH, M.D., *Secretary.*

HEPARIN SODIUM.—The hydrated sodium salt of a naturally occurring, complex organic polymer possessing anticoagulant properties. The chemical structure of heparin has not been fully established. It is considered to be a dextrorotatory polysaccharide made up of hexosamine and hexuronic acid units containing sulfuric acid ester groups. Heparin is found in a large number of body tissues. Heparin sodium may be prepared from liver or lung tissue by a modification (Kuizenga and Spaulding: *J. Biol. Chem.* **148**:641, 1943) of the method of Charles and Scott (*Biochem. J.* **30**:1927, 1936). The product is further purified for medicinal use.

Heparin sodium is standardized to possess not less than 100 units of anticoagulant activity per milligram of dry material, by the sheep plasma coagulation method (Kuizenga, Nelson and Cartland: *Am. J. Physiol.* **139**:612, 1943). The standard of potency is the Provisional International Standard, a dried preparation of the sodium salt of heparin to which has been assigned a potency of 130 units per milligram (*League of Nations, Bulletin of the Health Organization,* Vol. X, No. 2, p. 151, 1942-1943). This Provisional International Standard is to be used only as a standard of potency.

Actions and Uses.—Heparin sodium has the property of inhibiting blood coagulation. It may aid the normal body to maintain blood in a fluid state as traces are detectable in the blood. Very little is known concerning the metabolism, excretion and fate of heparin sodium in the body. Its anticoagulant action appears to be effected by action on the thrombin, which with fibrinogen forms fibrin.

The exact status of heparin sodium in surgery and medicine has not been determined, but it is claimed to be of value as a substitute for citrate in blood transfusions, in an attempt to prevent postoperative thrombosis and possibly thrombosis of other origin, the prevention of recurring thrombosis in phlebitis and pulmonary embolism, and other uses. It has been used alone and with sulfonamides in the treatment of subacute bacterial endocarditis, but much work remains to be done before this procedure can be generally accepted; results have not been impressive.

Dosage.—The potency of heparin sodium is expressed in units. Ampul solutions keep indefinitely and may be sterilized by boiling or autoclaving at 110 C. for thirty minutes. The substance is inactive orally and is usually injected intravenously. It may be given by single injection or continuous intravenous drip, the infusion being adjusted by watching the coagulation time. The clotting time should be maintained between fifteen and twenty minutes. If a chill develops or spontaneous bleeding occurs, the drug should be stopped. When the interrupted dose method is employed, 50 mg. (5,000 units) may be administered at intervals of four hours up to a total of 250 mg. per day. For continuous drip, 100 to 200 mg. (10,000 to 20,000 units) is added to 1,000 cc. of 5 per cent sterile dextrose or isotonic sodium chloride solution. The flow may be started at about twenty drops per minute.

Tests and Standards.—

Heparin sodium occurs as a white to lightly colored, amorphous, gumlike powder. It is very soluble in water but practically insoluble in alcohol, acetone, benzene, chloroform and ether. The *p*H of a 1 per cent solution of heparin sodium lies in the range 6 to 7 at 25 C.

Place 5 cc. of 0.005 per cent toluidine blue O solution (made by dissolving 25 mg. of toluidine blue O in 500 cc. of water containing 1 cc. of diluted hydrochloric acid) in a test tube, add 5 cc. of water and 1 cc. of 1 per cent heparin sodium solution: the color of the mixture changes from blue to reddish blue; add 2 cc. of petroleum ether and shake the mixture vigorously for one minute. Allow the emulsion to break: the color of the solution returns to pale blue and a purple precipitate collects in the interface between the liquids.

Place 1 cc. of 1 per cent heparin in a test tube; add 2.5 cc. of *o*-phenanthroline ferrous complex solution (U. S. P. XII, p. 739): a red precipitate forms.

Fuse about 50 mg. of heparin sodium with a small piece (2 cmm.) of metallic sodium in a test tube; cool, add 5 drops of ethanol, leach the fused mass with 5 cc. of water and filter: the filtrate responds to tests for cyanide and sulfide, indicating the presence of nitrogen and sulfur respectively.

Add 1 drop of ammonium hydroxide solution and 3 drops of 30 per cent hydrogen peroxide solution to 0.5 cc. of 1 per cent heparin sodium solution contained in a test tube. Heat on a water (steam) bath for ten minutes: no cloudiness results which cannot be cleared by making the solution acid to congo red, by the addition of just sufficient diluted hydrochloric acid (*barium ion*).

Mix 5 cc. of 1 per cent heparin sodium solution with 5 cc. of sulfosalicylic acid reagent (dissolve 20 Gm. of sodium sulfate decahydrate in 80 cc. of water, cool to 35 C., add 5.0 Gm. of sulfosalicylic acid, dissolve and dilute to 100 cc.). Heat the mixture to boiling; no cloudiness should be discernible (*protein*).

Ash 0.1 Gm. of heparin sodium in the presence of sulfuric acid in a tared porcelain crucible: the sulfated ash amounts to not more than 40.5 per cent of the dried substance.

Dry about 0.1 Gm. of heparin sodium for twenty-four hours at room temperature over phosphorus pentoxide in a vacuum desiccator at a pressure not above 5 mm. of mercury: the loss in weight is not more than 12 per cent.

Heparin sodium shall meet the pyrogen test described in the U. S. P. XII when solutions containing 1,000 units per cubic centimeter are injected in a dosage of 2.0 cc. per kilogram of body weight.

ABBOTT LABORATORIES, NORTH CHICAGO, ILL.

Solution Heparin Sodium: 10 cc. vials. Each cubic centimeter contains 10 mg. of heparin sodium, preserved with 0.5 per cent phenol.

UPJOHN COMPANY, KALAMAZOO, MICH.

Solution Heparin Sodium: 10 cc. vials. Each cubic centimeter contains 10 mg. of heparin sodium, preserved with 0.5 per cent chlorobutanol.

SODIUM ASCORBATE (See New and Nonofficial Remedies, 1946, p. 633).

The following dosage form has been accepted:

WILLIAM H. RORER, PHILADELPHIA

Solution Sodium Ascorbate: 100 mg. in 1 cc. ampuls. Each cubic centimeter contains sodium ascorbate equivalent to 100 mg. (2,000 international units) ascorbic acid and thiourea 0.01 per cent in sterile aqueous solution.

PENICILLIN IN OIL AND WAX (See the Supplement to New and Nonofficial Remedies, 1946, p. 15).

The following dosage form has been accepted:

PREMO PHARMACEUTICAL LABORATORIES, INC., NEW YORK

Penicillin (Calcium) in Oil and Wax: 1 cc. syringes or 5 cc. vials, 300,000 units per cubic centimeter.

THIAMINE HYDROCHLORIDE (See New and Nonofficial Remedies, 1946, p. 618).

The following dosage form has been accepted:

E. S. MILLER LABORATORIES, INC., LOS ANGELES

Tablets Thiamine Hydrochloride: 5 mg. and 10 mg.

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SATURDAY, APRIL 5, 1947

THE ATLANTIC CITY SESSION

In the Organization Section in this issue of The Journal appears an announcement relative to the General Scientific Meetings to be held in connection with the Atlantic City session, June 9-13. The programs of the General Scientific Meetings provide for discussions of subjects of special and timely interest to the medical profession and for panel discussions of the modern management of heart disease, emergency surgery and antibiotic therapy. Participating in the programs and in the panel discussions will be Professor George W. Pickering of London, Professor Herbert John Seddon of Oxford, England, and Sir Howard Florey of Oxford, noted for his clinical research on penicillin.

The centennial committee also announces that the Philadelphia Festival Orchestra, made up entirely of members of the world famous Philadelphia Orchestra, will provide music for the opening general meeting on Tuesday night, June 10, under the leadership of concertmaster and associate conductor Alexander Hilsberg. Mr. Hilsberg was recently appointed head of the orchestra department of the Curtis Institute in Philadelphia.

The Board of Trustees announces a dinner to be given to the presidents and other officers of organizations associated with medicine, distinguished publishers, industrialists and statesmen. This dinner will be held Saturday evening, June 7, in Atlantic City. The speakers on this occasion will be General Omar Bradley of the Veterans Administration; Mr. Basil O'Connor, chairman of the American Red Cross and president of the National Foundation for Infantile Paralysis, and Mr. H. W. Prentis Jr., president of the Armstrong Cork Company.

Additional announcements relative to various features of the annual session will be made weekly under the heading of Association News in The Journal. The preliminary program and complete information relative to various other features of the annual session will be published in The Journal for May 3.

OXALIC ACID

Oxalic acid, one of the earliest known organic acids, was prepared in crystalline form by Scheele in 1785. The toxicity of this compound has long been recognized and the adverse effects of its administration are attributed to its chief chemical reaction, namely the formation of a highly insoluble precipitate with calcium. However, many of the common articles of our diet contain oxalates[1] and, conversely, on experimental rations extremely poor in preformed oxalate, this substance continues to be present in the blood and urine. Oxalic acid, it has been claimed,[2] is a product of intermediary metabolism, particularly of carbohydrate.

The conviction that oxalate in food exerts a deleterious influence on the utilization of calcium was enhanced by the observation of Finke and Sherman[3] that experimental animals retained far less calcium when a portion of the dietary calcium was provided by spinach than when included as kale. The oxalate content of spinach and the lack of oxalate in kale were associated with the difference in utilization of the calcium of the diets. Other studies[4] of similar nature confirmed this general thesis. However, still other observations have failed to support the foregoing view; with diets adequate in vitamin D, calcium and phosphorus, as much as 0.9 per cent oxalate did not adversely affect growth and skeletal development in rats.[5] Again, in a study on young children, it was shown that neither spinach nor oxalate in modest amounts interfered with the utilization of calcium.[6]

Gortner and his co-workers[7] contributed to the physiologic chemistry of oxalic acid in another direction. These workers had previously demonstrated that the enamel of the teeth of rats is etched by solutions of sulfuric, citric, lactic and phosphoric acids with a p_H of 2.6. Oxalic acid of similar p_H not only did not have this effect but also protected the enamel against the other acids. Examination of the teeth after giving oxalic acid or sodium oxalate showed that there was present on the surface of the enamel a calculus-like encrustation which apparently exerted a protective action against erosion by the other acids. These observations recall the observation[8] that the oxalate ion reduces the solubility of powdered dental enamel in solution with an acid reaction.

The need for new investigations of the physiologic chemistry of oxalic acid is apparent from the foregoing account of current conflicting views. The clinician is deeply interested, for the precipitation of calcium oxalate in the renal tubules, ureters and urinary bladder is said to account for some 40 per cent of the cases of urolithiasis. Furthermore, with the recognition that the dicarboxylic acids take part in the metabolism of all the major foodstuffs, the biologic significance of oxalic acid requires more clearcut definition.

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[1] Smith, A. H., and Orten, J. M.: J. Nutrition **13:** 601 (June) 1937.

[2] Loeper, M.: Nutrition **3:** 1, 1933. Suzuki, S.: Jap. J. M. Sc., II. Biochem. **3:** 23 (Feb.) 1935.

[3] Finke, M. L., and Sherman, H. C.: J. Biol. Chem. **110:** 421 (July) 1935.

[4] Spiers, Mary: J. Nutrition **17:** 557 (June) 1939. Fairbanks, B. W., and Mitchell, H. H., ibid. **16:** 79 (July) 1938. Finke, M. L., ibid. **22:** 477, 1941.

[5] MacKenzie, C. G., and McCollum, E. V.: Am. J. Hyg. **25:** 1 (Jan.) 1937.

[6] Bonner, Priscilla; Hummer, Frances C.; Bates, M. F.; Horton, J.; Hunscher, Helen H. A., and Macy, Icie G.: J. Pediat. **12:** 188 (Feb.) 1938.

[7] Gortner, R. A.; McCay, C. M.; Restarski, J. S., and Schlack, C. A.: J. Nutrition **32:** 121 (Aug.) 1946.

[8] Buonocore, M. G., and Bibby, B. G.: J. Dent. Res. **24:** 103, 1945.

WHAT IS "NORMAL"?

What is the meaning of the term "normal" as applied to the human body? The results of physical examinations and laboratory tests are often recorded with the word "normal" jotted down with an easy assumption of accuracy entirely unjustified by the facts. In a discussion of this subject Ryle[1] says that "normal" is commonly considered as synonymous with "healthy"; but that label too needs better definition.

Probably most physicians simply mean by "normal" that an obviously demonstrable pathologic lesion has not been found. Yet, as Ryle points out, even this is questionable. Palpable epitrochlear glands, for example, which may be as large as a cherry stone, are demonstrable in about 40 per cent of adult men, unrelated to the presence of syphilis or other generalized disease of the lymph nodes. To say that the presence of palpable epitrochlear glands, therefore, is or is not normal raises an interesting question. A similar variability, Ryle says, obtains in respect to practically all measurable features of anatomy and physiologic activity. Organs and structures have a range of variation in size, shape or position. With the introduction of chest radiography, the diagnosis of "hilar tuberculosis" based on misinterpretation of the normal root shadows was once fashionable. Expensive abdominal supports and unsound surgical procedures which formerly were commonly employed led, after the introduction of the barium meal, to the frequent diagnosis of dropped stomach or dropped bowel. Variation in the human body is inherent in the race.

Where bodily function is concerned a sharp demarcation between inborn variations of health and induced variations of disease is not possible. Furthermore, a structure or function showing an extreme degree of variation from the mean may contribute to certain predispositions to disease or injury. The tall man, Ryle says, is more likely to hurt his head passing through a doorway. Some one with a native hyperchlorhydria and rapidly emptying stomach may be more likely to develop or retain a duodenal ulcer than some one with a less active organ and low gastric acidity. A complete standardization of structure and function would be incompatible with life. Variability of one individual from another and variability influenced by age, sex and activity in the population or species are essential to survival.

The chief difficulties in clinical medicine are encountered at the extreme ranges of natural variation. When does the pulse rate cease to be "normal"? At what point do the heart sounds, the strength of the knee jerk, the size and characteristics of the tonsils or the state of the thyroid pass from "normality" to the stage of disease? These are fundamental questions complicated in practice by the fact that the clinician is preoccupied with the sick and lacks access to and possibly interest in healthy controls. This largely one-sided view should not be overlooked by the practicing physician if his concept of normality is to imply, as it should, merely that the structure or function examined lies within a "range" not apparently reflecting any disease process.

Some variation, as Ryle says, can be measured and more accurate definitions given of the "healthy range." The pulse rate, the body temperature, the hemoglobin and the basal metabolic rate are examples belonging to this group. For each of these, however, constant reevaluation is necessary. There is no sharp dividing line between health and disease. The dictionary definition of "normal" does not therefore mean the same as the term does when employed by physicians in reference to the human body.

Current Comment

MEDICAL SERVICE AREAS

Elsewhere in this issue appears an article prepared by the Bureau of Medical Economic Research which describes a new approach to the study of the supply of medical service in the United States. The heretofore accepted measure of supply has been the number of physicians per county. This number is used to express a ratio of the number of people per physician. The method of measurement now being developed by the Bureau is derived from those retail marketing area principles which are applicable to the study of medical service areas. Such service areas would be far more realistic, for they would be based on a conception of medical service which is not confined within political borders. A physician does not limit his practice to those patients who reside within the county in which his office is located. His service may reach beyond the county. The geographic area in which the physician actually conducts his practice is the medical service area which must be used in any realistic study of the supply of medical care. The development of medical service areas for the entire country is an important step in the creation of a true economic picture of the effective distribution of physicians.

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[1] Ryle, John A.: The Meaning of Normal, Lancet 1:1 (Jan. 4) 1947.

EDWARD L. BORTZ SUCCEEDS TO PRESIDENCY

As announced in the Organization Section in this issue, Dr. Olin West, who was chosen President-Elect of the American Medical Association in 1946, has resigned the office because of ill health. According to the Constitution and By-Laws of the Association, Dr. Edward L. Bortz, Philadelphia, elected Vice President in 1946, succeeds to the office of President-Elect and will be inaugurated as President at the annual session of the Association to be held in Atlantic City, June 9-13. Dr. Bortz was born in Greensburg, Pa., Feb. 10, 1896. He received the A.B. degree from Harvard in 1920 and the degree of M.D. in 1923. Following his internship at the Lankenau Hospital from 1923 to 1925, he studied abroad at the University of Vienna and the University of Berlin during 1925-1926 and gave further special attention to pathology at the Mayo Clinic and the University of Illinois Medical School. He then became instructor in the Department of Pathology at the University of Pennsylvania School of Medicine and the Graduate School of Medicine from 1930 to 1932. He has been associate professor of medicine at the Graduate School of Medicine at the University of Pennsylvania since that time and also chief of Medical Service B at Lankenau Hospital. He has been a director of the Philadelphia County Medical Society and chairman of its committee on public relations and was president in 1940. He has also been chairman of the Committee on Scientific Business of the College of Physicians of Philadelphia and chairman of the Committee for the Study of Pneumonia Control of the Pennsylvania State Medical Society. Dr. Bortz has been a Fellow of the American College of Physicians since 1929 and received the certificate of the American Board of Internal Medicine in 1937. He has been assistant editor of the Cyclopedia of Medicine since 1929. In 1939 he received the Meritorious Service Medal for distinguished service to the commonwealth of Pennsylvania, the award being made by former Pennsylvania Governor George H. Earle. In 1943 he was presented with the Founders Medal of the Association of Military Surgeons for exceptional services rendered in connection with the arrangements for its assembly in Philadelphia. During World War II he was on active duty as lieutenant commander and later promoted to captain in the United States Navy, serving from January 1942 through January 1944. He was made a member of the Council on Scientific Assembly of the American Medical Association in 1942 and became its chairman in 1945. He is also chairman of the Committee on National Emergency Medical Service of the American Medical Association. He was a member of the House of Delegates in 1945. Dr. Bortz has served the Association efficiently; to him may be assigned much of the credit for the arrangement of excellent programs in the General Scientific Meetings held during his membership on the Council on Scientific Assembly.

Edward L. Bortz, M.D.

RUBELLA IN PREGNANCY

The tragic effects on the child that may follow rubella in the early months of pregnancy are now widely known. The first Australian observations have been confirmed by numerous reports. The association of rubella in pregnancy with deaf-mutism is pointedly emphasized in a recent letter by Sanderson, an English physician[1] whose granddaughter aged 6 years is a deaf-mute. Her mother had German measles in the third month of her pregnancy. An excellent little school was found for the child. In this school there were fifteen deaf-mute children, "all of the same age and all apparently victims of an epidemic of German measles" in 1940. In thirteen of these fifteen children the history revealed that the mother had German measles in the early months of pregnancy. This is, as the letter says, "strong evidence on the problem of etiology." The tragedy of deaf-mutism and of still other disasters that have come to be associated with rubella occurring in early pregnancy naturally brings up the question of inducing abortion in pregnancy complicated by rubella.

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[1] Sanderson, Robert: Rubella and Pregnancy, Brit. M. J. 1:199 (Feb. 1) 1947.

ORGANIZATION SECTION

THE ATLANTIC CITY SESSION

GENERAL SCIENTIFIC MEETINGS

Monday, June 9

Presiding Officer: Clyde L. Cummer, Cleveland

2 P. M.

The Antihistamine Drugs.	George L. Waldbott, Detroit.
The Emergency Treatment of Vascular Occlusions.	Edgar V. Allen, Rochester, Minn.
Significant Trends in Cancer Research.	Stanley P. Reimann, Philadelphia.
Cardiac Recovery.	Professor George W. Pickering, London, England.

Intermission

Presiding Officer: Henry R. Viets, Boston

3:30 P. M.

Panel: The Modern Management of Heart Disease.

Moderator: Paul D. White, Boston

Diuretics.	Arthur C. de Graff, New York.
Digitalis.	Harry Gold, New York.
Quinidine.	Louis N. Katz, Chicago.

Distinguished Guest: Professor George W. Pickering, London, England
"Hypertensive Encephalopathy."

Question and Answer Period.

5 P. M.

General Summary. Paul D. White, Boston.

Tuesday, June 10

Presiding Officer: Clyde L. Cummer, Cleveland

9 A. M.

The Obstructive Prostate.	Frank Hinman, San Francisco.
Psychosomatics: The Liaison Between Internal Medicine and Psychiatry.	Edward A. Strecker, Philadelphia.
Poliomyelitis.	Hart E. Van Riper, New York.
Nerve Grafting in the Limbs.	Professor Herbert John Seddon, Oxford, England.

Intermission

Presiding Officer: Charles H. Phifer, Chicago

10:30 A. M.

Panel: Emergency Surgery.

Moderator: R. Arnold Griswold, Louisville, Ky.

Head Injuries.	Barnes Woodhall, Durham, N. C.
Chest Injuries.	Brian B. Blades, Washington, D. C.
Abdominal Injuries.	Pat R. Imes, Louisville, Ky.
Extremities.	Mather Cleveland, New York.

Distinguished Guest: Professor Herbert John Seddon, Oxford, England

Question and Answer Period.

12 M.

General Summary. R. Arnold Griswold, Louisville, Ky.

Presiding Officer: L. W. Larson, Bismarck, N. D.

2 P. M.

Skin Problems of the Elderly.	Oliver S. Ormsby, Chicago.
Cancer of the Uterus.	Emil Novak, Baltimore.
Radioactive Products in Medicine.	Stafford Warren, Los Angeles.
New Antibiotic Agents.	Sir Howard Florey, Oxford, England.

Intermission

Presiding Officer: Clyde L. Cummer, Cleveland

3:30 P. M.

Panel: Antibiotic Therapy.

Moderator: Wesley W. Spink, Minneapolis

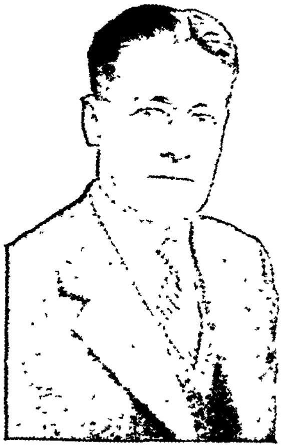
Streptomycin.	Chester S. Keefer, Boston.
Chemotherapy in Surgery.	John S. Lockwood, New York.
Development of Bacterial Resistance to Antibiotics.	Charles Phillip Miller, Chicago

Distinguished Guest: Sir Howard Florey, Oxford, England

Question and Answer Period.

5 P. M.

General Summary. Wesley W. Spink, Minneapolis.



Sir Howard Florey

Medical Economics

MEDICAL SERVICE AREAS IN THE UNITED STATES

FRANK G. DICKINSON, Ph.D.
Director of the Bureau of Medical Economic Research
Chicago

A study of the supply of medical service can best be made by disregarding the method now in general use, that of determining the number of people per physician in counties, townships or other political areas. An entirely new concept, based on established marketing principles, would provide a considerably more meaningful measurement and would replace what is now inadequate and misleading information on the supply of physicians in the United States.

Before explaining this new concept, one must first examine the old one, to find wherein it errs. It is customary to state the population in relation to the number of physicians as a ratio of *population to physicians within a specific area.* X County has 1 physician to 750 of population; Y County has 1 physician to 1,500 of population. These statistics are accurate, but how significant are they? Counties are political units, but medical care is an economic service that has no relation to political boundary lines. A physician is not a county coroner or a county sheriff. Many of his patients may come from areas outside the county in which his office is located. Our attention is called to the fact that approximately eighty counties do not have a resident physician. Many counties do not have a resident plumber or a resident electrician. A county is a political area, and these tradesmen—like physicians—render an economic service.

A particularly vivid case in point is demonstrated on a certain county map of the state of Minnesota, each county having been shaded according to the number of physicians per thousand of population. White counties had 1 physician to 1,000 population or less. *Black counties had 1 physician to 3,000* or more. Various other shadings were included between the two extremes. Hennepin and Ramsey counties, locale of Minneapolis and St. Paul, were, of course, white. Anoka County, which borders these two counties, was black, indicating a ratio of 1 physician to *3,000 or more people. Does this mean that the people living* in Anoka County could not obtain adequate medical care because of the small number of physicians residing in this county? It would be wrong to assume that this was the case. Actually, the population of Anoka secures its medical care, does most of its shopping and works in the centers located in the two adjacent counties not many miles distant. There is urgent need for a new map of medical service, one that will not show county lines but will be based on actual medical service areas.

To define a medical service area, we would do well to consider principles applied to the study of retail trading areas. Every store has an area or territory from which it can logically expect to secure customers. The news counter in an office building can expect to sell to people entering the building. A neigborhood grocery store may draw customers from a radius of a few blocks. A department store in the central shopping district of a large city may attract customers from a distance of many miles. A retail trade area means the territory from which the stores in a town, or a district within a city, secure or can secure a considerable part of the purchases made by the consumers. A physician renders service to people residing in a territory closely related to the retail trading area.

There are three types of retail trade areas: for fashion goods, for service goods and for convenience and bulk goods. Convenience and bulk goods are usually purchased as near the home as possible; consumers will travel farthest to obtain fashion goods. Medical care is a service good, and it is with the area in which this service is purchased that we are concerned. The question arises as to the possible necessity of differentiating between the area from which a physician draws patients to his office and the area which he services in making his home calls; furthermore, the area served by specialists differs from the area served by the general practitioner, *and these differences are worthy of* future study. In this preliminary study of the medical service area it will be sufficient to refer to a medical service area as including both office and home calls and to average out the differences roughly between "specialist" and "general practitioner" areas.

Market analysts, in discussions of retail trading areas and in attempts to mark them off on a map, usually distinguish between primary and secondary trading centers. A trading area will normally include one primary trading center and a number of secondary trading centers. For our purposes I will say that there will be a number of secondary centers in our medical service area and that these secondary trading centers will be *smaller towns having 1 or more physicians. The primary trading* center draws a considerable amount of trade from the surrounding territory and loses relatively little trade of its own large city residents to the smaller secondary trading-center towns.

It must be remembered that there are no absolutes in marketing areas. The secondary center loses a large portion of its trade to the primary center but does retain some of the trade. For certain types of goods, food, small service and convenience goods, it retains a considerable amount of the trade. The primary center, while drawing from a large area, does lose a small amount of the trade of its residents to the secondary centers. Marketing areas can never be absolutely defined. Medical service areas, following the same principles, cannot be absolutely defined. One town may draw from an extremely large area—an area which it is impossible to define on a map. A medical service map of Rochester, Minn., home of the Mayo Clinic, might conceivably include New Zealand. Such a center as Rochester might be called a "prime-primary center," but it is customary to use only the terms primary and secondary trading centers. Some primary centers have, of course, far more draw*ing power than others. Medical service areas around great* medical centers such as Rochester may receive special treatment after all the other areas have been established; they will be featured in later studies of "specialist vs. general practitioner" areas. Medical service areas drawn on state highway maps will *define the geographic area in which the majority of medical* services of all types is obtainable. Some of these areas will be better defined than others; yet even the most hastily and carelessly circumscribed areas will, I believe, provide a closer approximation of the realities of medical service than county areas.

The Bureau of Medical Economic Research has undertaken the task of setting up medical service areas for the United States. As a preliminary step, maps have been sent to all the county medical societies through the state secretaries, and the county secretaries have been asked to mark off on the map of their state the area which the physicians in their primary medical service center, if any, service. If the county has no such primary medical service center within its borders, then the county will be included in one or more medical service areas whose primary center or centers lie outside that county. Not every *county will have a primary medical service center, just as not* every county will have a primary trading center. The response of the state and county secretaries to this first project has been excellent, and the areas which show up on the state maps have slight relation to the county boundary lines. From the first studies it is estimated that medical service areas will total approximately one half of the number of counties within a state.[1]

The results so far received show much overlapping; secretaries in the nearby larger counties separated by a rural county may both claim more than one half of this rural county, thereby including portions of this rural county in both medical service areas. This overlapping is usual and customary *in the early* stages of market research studies. The state secretary should feel encouraged by this overlapping, because it shows that the county secretaries are trying to do a good job. One of the tasks of the state secretary will be to get the county secretaries involved to allocate the disputed territory so that the overlapping will be eliminated finally. Mutually exclusive areas are to be expected after consultation with the various county secretaries and after consideration of the trading habits and customs of the people in that particular area of the state.

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[1] P. D. Converse has made a study of retail trading areas in Illinois and has defined less than forty such areas. There are 103 counties in Illinois. Reilly's Law of Retail Gravitation was the method used to mark off the areas. Retail Trade Areas in Illinois, University of Illinois, Urbana, 1946, p. 16.

At the state level there will be overlapping because people who are near the border of the state may look to the large city just across the state border for a considerable portion of their medical service. The elimination of these overlapping interstate areas will require conferences between the state secretaries concerned. These overlapping areas should be eliminated, therefore, as the last step in the process of developing mutually exclusive medical service areas.

When the medical service areas comprising every square mile of the United States have been completed, every medical service area will in normal times have one or more physicians, and no medical service area will be without the services of a physician. Further study may be required to determine the number and percentage of families in an area which are more than 30 miles or thirty minutes from a physician.

The problem of eliminating overlapping areas in some instances may require some formal statistical procedures. The allocation of a disputed area could be solved scientifically by asking all (or a good sample of) the doctors (specialists and general practitioners) within a reasonable distance from the disputed area to record for the first week in each of twelve successive months the home town of each and every patient (home, office or hospital) seen during the week. These records, when sorted by towns in the disputed area, would clearly reveal whether more patients from the disputed area used the medical service of town A or town B more frequently. In fact, this technic would be the best method to use in setting up the medical service areas in the first place, but the Bureau of Medical Economic Research recognizes that such a requirement would be extremely formidable and should be used only as a last resort.

The vital question of the supply of medical care and the distribution of physicians may be answered in the development of this new concept of medical service areas. Its primary significance will be that it will show far more accurately than previously used methods the areas in which physicians practice and the extent to which medical services are available to the people of the United States.

A complete medical service map of the United States will be only the first major step in the Bureau study of the supply of medical service.[2] It is the first step because it answers only the geographic questions of supply. The population per physician in a medical service area treats all doctors as equal units of supply; it is a quantitative and not a qualitative index of supply. The second step in the study of the supply of medical service will be functional and qualitative. It will not treat all doctors as being equal on the supply side of medical economics; it may require several years to complete.

Washington Letter

(From a Special Correspondent)

April 2, 1947.

A. M. A. Position on Health, Education and Security Department Stated

Spokesmen for the American Medical Association testified before the Senate Committee on Executive Department Expenditures that the A. M. A. "is opposed to having health activities grouped with other activities in a department with cabinet status." Dr. R. L. Sensenich of South Bend, Ind., chairman, and Dr. James R. Miller of Hartford, Conn., member of the A. M. A. Board of Trustees, testified at hearings on two bills for establishment of a Department of Health, Education and Security activities. They declared that they are in favor of the bill sponsored by Senator Taft, Republican of Ohio, to create a National Health Agency composed of the U. S. Public Health Service and several other federal health units, most of which are now under the Federal Security Agency. Mr. Taft said that if his bill for a new federal department was passed he would withdraw the conflicting National Health Agency measure. Other medical witnesses spoke in support of a bill to set up a Department of Health, Education and Security with a secretary, an undersecretary, and two assistant secretaries.

General Eisenhower Says Lack of Doctors Is Army's Chief Problem

General Eisenhower, Army Chief of Staff, said that the War Department's "worst problem" is the national shortage of doctors and the reluctance of medical practitioners to join the regular army. He informed the Senate Armed Services Committee that there is a proposal before the Budget Bureau to improve the Army Medical Service by hiring civilian consultants and raising the pay of physicians. Also considered is a plan to combine Army and Veterans Administration hospital services. General Eisenhower said that the Army must be ready to look after medical needs of an atomic war. He declared that in global warfare all medical services should be under the control of one man. The question was brought up during hearings on the Army-Navy Unification Bill when Chairman Gurney, Republican of South Dakota, suggested that a medical man serve on the Joint Chiefs of Staff to assure "adequate consideration" of the problem. General Eisenhower agreed with Senator Russell, Democrat of Georgia, that the problem goes beyond the Army and the Navy because there are not enough facilities in American medical schools to serve the nation's needs. General Eisenhower said that General Omar Bradley, Veterans Administration chief, told him that only one in ten former service men taking premedical courses can be accommodated in American medical colleges.

Dr. Thomas Parran Delivers Annual Kober Lecture

In recognition of his outstanding contribution to medical research, Dr. Thomas Parran, Surgeon-General, U. S. Public Health Service, delivered the 1947 Kober Lecture at Georgetown University. Dr. Parran spoke on "Research and Total Health." Under terms of the Kober Foundation an outstanding physician is selected each year to lecture on March 28, birthday of the late Dr. George Martin Kober, former dean of Medicine of Georgetown University. Dr. Eugene F. DuBois, professor of physiology at Cornell University Medical College, was selected by the Association of American Physicians as Kober medalist for 1947.

Capital Is Host to Nurses from Thirty-One Countries

Nurses from thirty-one countries will be guests in Washington, D. C., during the week of May 4 when the Congress of the International Council of Nurses meets here for committee meetings, inspection of medical facilities and sightseeing. The group will spend the following week at Atlantic City, N. J. The American Nurses Association, through the State Department, invited thirty-five nations to send delegates, and acceptances have been received from all but four, Bulgaria, Yugoslavia, Germany and Japan. The Soviet Union is not a member.

New Medical Clinic Founded in Washington

Dr. Wallace M. Yater, formerly with the Mayo Clinic, announced establishment here of a clinic patterned after that of the Mayo Brothers and offering diagnostic and treatment service in many phases of medical and surgical practice. Dr. Yater said that two members of his staff, Drs. Robert J. Coffey, surgeon, and Katherine Knop, child specialist, were formerly with the Mayo Clinic. It is planned to have a staff of sixteen by July, with fellowships for three young physicians.

Doctors Urged to Use "Plain English"

Clark D. Bridges, director of conservation service, Zurich Insurance Company of Chicago, told a clinic of Rehabilitation Agencies of thirteen states that "use of plain English" instead of highly technical terms in medical diagnoses would benefit not only the physically handicapped but society. He said that most job placements are made by laymen who know nothing of medical terms. If the language used could be understood, there would be a great reduction in the number of unsuccessful placements.

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[2] An economist is always interested in both demand and supply. On the demand side, an interesting approach is described in a preliminary report of a study being made to determine the need for medical care among Michigan farm families. A sample was studied in order to judge the reliability of medical need schedules used by interviewers of selected families; the members of these families interviewed were subsequently examined by physicians in order to check the validity of the medical needs reported to the interviewers. The study is "The Determination of Unmet Need for Medical Attention Among Michigan Farm Families," by Charles R. Hoffer and Edgar A. Schuler of Michigan State College in cooperation with Dr. Rosalie Neligh and Dr. Thomas Robinson, University of Michigan Medical School.

Official Notes

RESIGNATION OF DR. OLIN WEST

The Board of Trustees of the American Medical Association regrets to announce the resignation of Dr. Olin West from the position of President-Elect. Under the Constitution and By-Laws the Board of Trustees has notified Dr. Edward L. Bortz, Vice President, that he succeeds to the office and becomes President-Elect. Following is the letter of resignation received from Dr. West:

Dr. R. L. Sensenich
Chairman, Board of Trustees
American Medical Association

My dear Doctor Sensenich:

Because of continued and possibly permanent impairment of health, I feel compelled to submit to the Board of Trustees, through you as its Chairman, my resignation as President-Elect of the American Medical Association, to take effect immediately.

I take this step with the greatest possible regret, because of having been signally honored by the action of the House of Delegates in electing me to this high office, as well as because of my devotion to the Association and to its ideals. It has been my most earnest desire and my strongest intention to do all that I could do to promote the great cause that the Association has served so well for nearly one hundred years. I sincerely hope that even as an humble member in the ranks I can make some small contribution toward the success of the very worthy aims of our great society.

I am now firmly convinced that I cannot properly perform the duties of the President-Elect and, later, those imposed on the President and that, in all fairness to the Association, my resignation should be submitted and officially accepted.

It now seems probable that I shall not be able to attend the Centennial Session to be held in Atlantic City, in which case I hope you, as Chairman of the Board of Trustees, will present my apologies for my failure in office. I hope that the House of Delegates will believe that "the spirit was willing but the flesh was weak."

I have an abiding faith in the A. M. A. and in the sincerity, integrity and soundness of judgment of those who have served and now are serving as members of its official bodies. May the richest of blessings come to all of them!

Very truly yours,
OLIN WEST.

Coming Medical Meetings

Alabama, Medical Association of the State of, Birmingham, April 14-16. Dr. Douglas L. Cannon, 519 Dexter Ave., Montgomery 4, Secretary.

American Association for Thoracic Surgery, St. Louis, May 28-30. Dr. Richard H. Meade Jr., 55 E. Washington St., Chicago 2, Secretary.

American Association of Industrial Physicians and Surgeons, Buffalo, N. Y., Statler Hotel, April 26-May 4. Dr. Frederick W. Slobe, 28 E. Jackson Blvd., Chicago 4, Secretary.

American Association of Pathologists and Bacteriologists, Chicago, May 16-17. Dr. Howard T. Karsner, 2085 Adelbert Road, Cleveland 6, Secretary.

American Association of the History of Medicine, Cleveland, May 25-26. Dr. Howard Dittrick, 2020 E. 93d St., Cleveland 6, Secretary.

American Association on Mental Deficiency, St. Paul, Minn., May 28-31. Dr. Neil A. Dayton, Box 51, Mansfield Depot, Conn., Secretary.

American College of Physicians, Chicago, April 28-May 2. Mr. E. R. Loveland, 4200 Pine St., Philadelphia 4, Secretary.

American Laryngological Association, St. Louis, April 23-24. Dr. Arthur W. Proetz, 12 Westmoreland Place, St. Louis 8, Secretary.

American Laryngological, Rhinological and Otological Society, St. Louis, April 25-26. Dr. C. Stewart Nash, 288 Alexander St., Rochester 7, N. Y., Secretary.

American Otological Society, St. Louis, April 21-22. Dr. Gordon D. Hoople, 713 E. Genesee St., Syracuse 2, N. Y., Secretary.

American Pediatric Society. Stockbridge, Mass., May 13-15. Dr. Henry G. Poncher, 1819 W. Polk St., Chicago 12, Secretary.

American Physiological Society, Chicago, May 18-22. Dr. Maurice Visscher, University of Minnesota, Minneapolis, Secretary.

American Psychiatric Association, New York, Hotel Pennsylvania, May 19-23. Dr. Leo H. Bartemeier, General Motors Bldg., Detroit, Secretary.

American Society for Clinical Investigation, Atlantic City, Chalfonte-Haddon Hall, May 5. Dr. Eugene A. Stead Jr., Grady Hospital, Atlanta 3, Georgia, Secretary.

American Society for Experimental Pathology, Chicago, May 19-23. Dr. Frieda S. Robschlit-Robbins, 260 Crittenden Blvd., Rochester, N. Y., Secretary.

American Society for Pharmacology and Experimental Therapeutics, Chicago, May 18-22. Dr. Harvey B. Haag, Medical College of Virginia, Richmond 19, Va., Secretary.

American Society for Research in Psychosomatic Problems, Atlantic City, May 3-4. Dr. Edwin G. Zabriskie, 714 Madison Ave., New York 21, Secretary.

American Society of Biological Chemists, Chicago, May 18-22. Dr. Otto A. Bessey, Public Health Research Institute, New York 9, Secretary.

Arizona State Medical Association, Tucson, May 7-10. Dr. Frank J. Milloy, 112 N. Central Ave., Phoenix, Secretary.

Arkansas Medical Society, Little Rock, April 17-19. Dr. William R. Brooksher, 602 Garrison Ave., Fort Smith, Secretary.

Association of American Physicians, Atlantic City, May 6-7. Dr. Joseph T. Wearn, Lakeside Hospital, Cleveland 6, Secretary.

California Medical Association, Los Angeles, Hotel Biltmore, April 30-May 3. Dr. L. Henry Garland, 450 Sutter St., San Francisco 8, Secretary.

Connecticut State Medical Society, New Haven, April 28-30. Dr. Creighton Barker, 258 Church St., New Haven 10, Secretary.

Federation of American Societies for Experimental Biology, Chicago, May 18-22. Dr. William H. Chambers, 1300 York Ave., New York 21, Secretary.

Florida Medical Association, Miami, April 20-23. Dr. Robert B. McIver, P. O. Box 1018, Jacksonville, Secretary.

Georgia, Medical Association of, Augusta, Bon Air Hotel, April 22-25. Dr. Edgar D. Shanks, 478 Peachtree St. N. E., Atlanta, Secretary.

Hawaii Territorial Medical Association, Lihue, Kauai, May 1-4. Dr. Harry L. Arnold Jr., 510 S. Beretania St., Honolulu 53, Secretary.

Illinois State Medical Society, Chicago, Palmer House, May 12-14. Dr. Harold M. Camp, 224 S. Main St., Monmouth, Secretary.

Iowa State Medical Society, Des Moines, April 16-18. Dr. John C. Parsons, 406 Sixth Ave., Des Moines 9, Secretary.

Kansas Medical Society, Topeka, May 12-15. Dr. John M. Porter, 512 New England Bldg., Topeka, Secretary.

Louisiana-Mississippi Ophthalmological and Otolaryngological Society, Biloxi, Miss., Buena Vista Hotel, May 5. Dr. Edley H. Jones, 1301 Washington St., Vicksburg, Miss., Secretary.

Louisiana State Medical Society, New Orleans, May 12-14. Dr. P. T. Talbot, 1430 Tulane Ave., New Orleans 13, Secretary.

Maryland, Medical and Chirurgical Faculty of, Baltimore, April 22-23. Dr. W. Houston Toulson, 1211 Cathedral St., Baltimore 29, Secretary.

Massachusetts Medical Society, Boston, Hotel Statler, May 20-22. Dr. Michael A. Tighe, 8 Fenway, Boston 15, Secretary.

Medical Library Association, Cleveland, Wade Park Manor, May 27-29. Miss Heath Babcock, New York State Medical Library, Albany 1, New York, Secretary.

Mississippi State Medical Association, Biloxi, May 6-8. Dr. T. M. Dye, Box 295, Clarksdale, Secretary.

Nebraska State Medical Association, Omaha, April 28-May 1. Dr. R. B. Adams, 416 Federal Securities Bldg., Lincoln 8, Secretary.

New England Diabetes Association, Boston, City Hospital, April 16. Dr. James H. Townsend, 330 Mt. Auburn St., Cambridge, Mass., Secretary.

New Jersey, Medical Society of, Atlantic City, Haddon Hall, April 22-24. Dr. Alfred Stahl, 160 Lincoln Ave., Newark 4, Secretary.

New Mexico Medical Society, Albuquerque, April 30-May 3. Dr. H. L. January, 221 West Central Ave., Albuquerque, Secretary.

New York, Medical Society of the State of, Buffalo, May 5-9. Dr. Walter P. Anderton, 292 Madison Avenue, New York 19, Secretary.

North Carolina, Medical Society of the State of, Virginia Beach, Va., Cavalier Hotel, May 12-14. Dr. Roscoe D. McMillan, P. O. Box 232, Red Springs, Secretary.

North Dakota State Medical Association, Fargo, May 25-27. Dr. L. W. Larson, 221 Fifth St., Bismarck, Secretary.

Northern Tri-State Medical Association, Detroit, April 8. Dr. John L. Stifel, 232 Michigan St., Toledo 2, Ohio, Secretary.

Ohio State Medical Association, Cleveland, May 6-8. Mr. Charles S. Nelson, 79 E. State St., Columbus 15, Executive Secretary.

Oklahoma State Medical Association, Tulsa, Mayo Hotel, May 14-16. Mr. R. H. Graham, 210 Plaza Court Bldg., Oklahoma City, Executive Secretary.

Rhode Island Medical Society, Providence, May 14-15. Dr. Morgan Cutts, 106 Francis St., Providence 3, Secretary.

Society of American Bacteriologists, Philadelphia, May 13-16. Dr. Leland W. Parr, 1335 H St. N. W., Washington 5, D. C., Secretary.

Tennessee State Medical Association, Memphis, April 8-10. Dr. W. M. Hardy, 706 Church St., Nashville 3, Secretary.

Texas, State Medical Association of, Dallas, Adolphus Hotel, May 5-8. Dr. Holman Taylor, 1404 W. El Paso St., Fort Worth 3, Secretary.

United States-Mexico Border Public Health Association, San Diego, California, and Tijuana, Mexico, May 6-8. Dr. James A. Grider Jr., 151 U. S. Court House, El Paso, Texas, Secretary.

West Virginia Medical Association, Charleston, May 12-14. Mr. Charles Lively, 1031 Quarrier St., Charleston 24, Secretary.

Medical Legislation

STATE LEGISLATION

Arizona

Bill Passed.—H. 163, which passed the house March 13, proposes to require each applicant for a **marriage license** to present a certificate signed by a duly licensed physician stating that the applicant is free from syphilis and other venereal diseases, tuberculosis and any other chronic or malignant infectious disease.

Colorado

Bills Introduced.—H. 262 proposes the enactment of **an occupational tax on certain professions** but specifically exempts from the operation of such tax the services of chiropractors, osteopaths, physicians, surgeons, dentists, embalmers, nurses, optometrists, undertakers, chiropodists, hospitals, cemeteries or state licensed veterinarians S 361 proposes to authorize the state board of medical examiners to grant licenses to practice naturopathy defined as "the art and science of applied healing forces by the use of Physiotherapy, Hydrotherapy, Mechanotherapy, Manipulative therapy, Electrotherapy, Phytotherapy, use of Nutritions, Diets, Hygiene and Sanitary Measures and minor surgery as taught in Naturopathic Colleges Provided, however, that the use of Narcotics, poisonous herbs, poisonous drugs, serums and vaccines shall not be construed as Naturopathy as heretofore defined"

Idaho

Bill Enacted—S 102, which has become chapter 220 of the Laws of 1947, is a state **hospital survey and construction act** requiring a statewide survey of hospital facilities and the preparation of a program for the construction of additional needed facilities The act requires the appointment of an advisory hospital council and authorizes the commissioner of the state department of public health to apply for and accept federal funds to assist the state in survey and construction activities.

Illinois

Bill Introduced.—H. 283 proposes a law for the licensing and **regulation of public and private hospitals** and sanatoriums, maternity hospitals, lying-in homes, rest homes, nursing homes, boarding homes and other institutions and places providing hospitalization or inpatient or nursing care.

Indiana

Bills Enacted.—H. 450, which has become chapter 172 of the Laws of 1947, provides for the licensing, inspection and regulation of **nursing homes.** S. 50, which has become chapter 235 of the Laws of 1947, creates an Indiana **Council for Mental Health** to, among other things, prescribe by rule or regulation classification of state psychiatric personnel and to prescribe the minimum qualifications for employment in each classification.

Kansas

Bill Introduced.—H. 399 proposes the enactment of a **hospital survey and construction act** requiring a survey of existing hospital facilities and the preparation of a program for the construction of additional needed facilities. The proposal also provides for the appointment of an advisory hospital council and authorizes the application for and receipt of federal funds to assist in the survey and construction activities within the state

Maine

Bill Introduced—S 449 proposes to authorize the governor to appoint **an advisory hospital council** to advise and consult with the department of health and welfare in carrying out the administration of the existing hospital survey act.

Maryland

Bills Introduced—H 663, to amend the hospital law, proposes to designate **the state board of health** as the sole agency to represent the state of Maryland in obtaining benefits under the federal hospital survey and construction act and proposes also to authorize the governor to appoint an advisory council on hospital construction S. 358, to amend the medical practice act, proposes to exempt therefrom **Christian science practitioners** duly registered in the *Christian Science Journal* of the Christian Science Publishing Society, Boston

New Jersey

Bill Introduced.—S. 208 proposes to authorize the state department of health to purchase and distribute free, in accordance with rules of said department, **antibiotics** for use in preventing or treating communicable diseases

New Mexico

Bill Passed.—H. 45, which passed the house March 13, proposes to require all applicants for a **marriage license** to present a certificate from a physician and surgeon duly licensed to practice medicine and surgery in the state of New Mexico showing that such applicant is not, in the opinion of the physician, infected with syphilis in such a stage that it may become communicable to the marriage partner.

Bills Enacted.—S. 12, which was approved March 21, is a state **hospital survey and construction act** requiring a survey of existing hospitals and the preparation of a program for the construction of additional facilities. The act requires compliance with the requirements of the federal hospital survey and construction act and regulations thereunder S. 80, which was approved March 18, to amend the law relating to **osteopathic physicians,** provides that if the presence of an osteopathic physician on the staff of any tax supported hospital will under federal law or regulation prevent such hospital from receiving any federal funds the governing authority of such hospital will have the power to remove all osteopathic physicians from the staff of such hospital. S. 138, which was approved March 20, is an enabling act for the formation and regulation of **physicians' service plans.** S. 246, which was approved March 18, to amend **the workmen's compensation act,** authorizes an employer or insurer to be entitled to have a physical examination of any claimant by a physician of his own choice, subject to the furnishing of reports, subject to the requirement that the physician be qualified to practice medicine under the laws of this state or the state wherein the claimant resides and subject to certain other requirements, S 247, which was approved March 19, to amend the law relating to the **director of public health,** provides that such director shall be a person having a degree of Doctor of Medicine, licensed or eligible for licensure in the state of New Mexico, and fixes the director's salary at not to exceed $6,000 per year

New York

Bill Enacted.—S 167, which was approved March 8, amends the law relating to the **practice of midwifery** by requiring as a condition to annual renewal of a license evidence that the applicant has attended and conducted one or more deliveries during the twelve months last past.

North Carolina

Bills Introduced.—H. R. 703 proposes the appointment of a commission for the special purpose of studying and investigating the administration of the **various examining boards** in the state. H. 630 proposes the creation and establishment of a two year medical school at the North Carolina College at Durham

North Dakota

Bills Enacted.—H. 23, which was approved March 14, 1947, provides for the licensing of **maternity homes** for unmarried mothers and requires that every birth occurring in such a home shall be attended by a legally qualified physician, if available, otherwise by a registered nurse until the services of a legally qualified physician can be obtained. H. 33, which was approved March 15, requires **drivers of school busses** to be examined annually by a reputable physician and to present to the school board a certificate of physical fitness showing good physical and mental health, able bodied and freedom from communicable diseases, as well as normal use of both hands, both feet, both ears and both eyes. H. 127, which was approved March 15, provides for licensing of **chiropractic hospitals** by the state board of chiropractic examiners

Ohio

Bill Introduced—H. 295 proposes to authorize the use in court of evidence of the amount of **alcohol in a person's blood** taken within two hours of the time after he is arrested as shown by a chemical analysis of his blood, urine, breath or saliva. This proposal would apply to the trial of any action or proceeding arising out of acts alleged to have been committed by any person arrested for operating a motor vehicle or motorcycle while in an intoxicated condition.

Oklahoma

Bill Introduced.—H. 278 proposes to make it a misdemeanor for any person **to use the word "Doctor"** or to hold himself out as qualified to engage in the practice of any of the healing arts without holding an unrevoked license or certificate issued by the laws of the state authorizing the person to practice the healing art covered by the license.

Bills Enacted.—H. 51, which was approved March 17, amends **the chiropractic act** by requiring, as a condition for annual renewal of a license, that the applicant present satisfactory evidence that he has attended a two day educational postgraduate program during the prior year or that he was unavoidably prevented by sickness or otherwise from attending such program. H. 159, which was approved March 13, requires various practitioners of the healing art **to list descriptive letters** after their names in order to designate the branch of practice in which they engage

Oregon

Bills Enacted.—H. 7, which was approved March 12, requires all physicians licensed by the state board of medical examiners to report immediately to the local health officer the name, sex, date of birth and address of every person diagnosed as a case of **epilepsy or similar disorder** characterized by momentary or prolonged lapses of consciousness or control which is or may become chronic H. 182, which was approved March 12, to amend the chiropractic law, increases from $5 to $10 the annual **registration fee of chiropractors** and requires that at the time of applying for such annual registration the applicant must show that he has attended a three day educational program provided annually by the Oregon Association of Chiropractic Physicians S. 189, which was approved March 10, increases the **annual registration fee** of physicians from $5 to $10

Washington

Bills Enacted—H 297, which was approved March 19, 1947, requires a survey for the discovery, treatment, hospitalization, education and training of persons afflicted with **cerebral palsy** and the appointment of a committee to make such survey. H. 378, which has become chapter 168 of the Laws of 1947, requires **applicants for a license** to practice medicine and surgery to have graduated from a medical school accredited and approved by the Association of American Medical Colleges and the Council of Medical Education and Hospitals of the American Medical Association.

GOVERNMENT SERVICES

ARMY

THE AIR SURGEON PROMOTED

Malcolm C. Grow, the Air Surgeon, U. S. Army, was recently promoted to major general. General Grow graduated from Jefferson Medical College, Philadelphia, in 1909 and served with the U. S. Army in France in World War I and with the Army of Occupation in Germany. He attended the Army School of Aviation Medicine in 1928 and later was assigned to Wright Field for experimental work on winter flight clothing. He was appointed chief, Medical Division, Office of the Chief of the Air Corps, in 1935 and later surgeon, Third Air Force; Surgeon, 8th Air Force; Surgeon, U. S. Strategic Air Forces in Europe; Surgeon, Strategic and Tactical Air Forces, Guam; acting Air Surgeon, and in January 1946 became the Air Surgeon. General Grow received the John Jeffries Award of the Institute of the Aeronautical Sciences in January 1947 for outstanding contributions to the advancement of aeronautics through medical research.

LIBRARY CONSULTANTS INCORPORATE

The Association of Honorary Consultants to the Army Medical Library has been incorporated under the laws of the District of Columbia and will continue as an advisory body to the Surgeon General in matters pertaining to the library. The association is an outgrowth of an advisory board of prominent physicians and librarians appointed in 1931. The Surgeon General in 1943 appointed additional consultants, and the number has grown until there are now more than eighty-five members. The association is financed by the Rockefeller Foundation under the auspices of the American Library Association.

CONFERENCE OF LABORATORY SPECIALISTS

Field medical laboratory service was the subject of a recent conference at the Surgeon General's Office, of specialists, all of whom had been on active duty during the recent war. The meeting was called to discuss present laboratory organization in the light of recent war experience with a view toward improving its form and equipment. The chairman of the conference was Dr. Ralph Muckenfuss, New York, who commanded the First General Laboratory in Europe. In addition to the civilian specialists, medical department officers were ordered from near and distant points to attend the conference. Among the speakers were the present chief, Laboratories Branch, Surgeon General's Office, Lieut. Col. Robert L. Cavenaugh, M. C., who surveyed the laboratory service in World War II; Col. Henry C. Dooling, M. C., chief, Medical Consultant's Division, Surgeon General's Office, discussed hospital laboratory functions, stressing clinicolaboratory cooperation; Lieut. Col. Carl T. Dubuy, M. C., chief, Troop Units Division, discussed proposed changes in various medical units and tables of organization.

CELEBRATED CHINESE PUBLICATION

The Army Medical Library has acquired a copy of the Chinese Golden Mirror of Medicine (Yu Tsuan I Tsing Chin Chien), the original of which was published in 1749. The set contains an introductory volume and ninety volumes of text, with numerous woodcut illustrations. It was written in two sections by a staff of eighty persons in compliance with an imperial order, the first on internal medicine consisting of seventy-four volumes, the second on general surgery consisting of sixteen volumes. The first twenty-five volumes contain corrections of the ancient classics of Chang Chung-Ching, the "sage" of medicine, whose Essay on Typhoid was published in 216 A. D. The other volumes cover general diseases, women's diseases, children's diseases, smallpox, surgery, diseases of the eyes, method of acupuncture, bone setting and orthopedics. Special chapters consider parasitology, leprosy and inoculation, which is known to have been practiced in China since the Sung dynasty, during the reign of Emperor Teu Tsung, 1023-1063 A. D.

CONFERENCE OF ARMY CHIEF NURSES

A four day conference of chief nurses of army general hospitals in various parts of the country was held in the Office of the Surgeon General, March 18-21, to discuss problems of the postwar organization and nursing service. Major Gen. Norman T. Kirk, the Surgeon General of the Army, gave the welcoming address. Col. F. A. Blanchfield, chief, Nursing Consultants Division, stated the aims of the conference. Among the subjects discussed were the army hospitalization program, personnel in army hospitals, personnel analysis and resources, board proceedings in connection with disposition, retirement and physical standards of army nurses, the hospital supply program, the reserve program, standardization of nursing procedures, dietetic problems, physical therapy problems and efficiency ratings. A reception and dinner was held at the Officers' Club, Fort Myer, March 19, in honor of Colonel Blanchfield, whose tour of duty expires May 31.

FLIGHT NURSES

Eleven officers of the Army Nurse Corps graduated from the Army School of Aviation Medicine, Randolph Field, Texas, on March 7, as "flight nurses" after an intensive nine weeks' training course.

The first five weeks are devoted to basic military medical and surgical subjects. Nursing care and management of wounded during flight are given special consideration. Actual air evacuation flights in the continental United States provide the final four weeks of on the job training. On the completion of the course, the graduate is authorized to wear the distinctive wings of the Army Air Force flight nurse.

Col. Harry G. Armstrong, Medical Corps, commandant of the school, presented the diplomas.

ARMY AWARDS AND COMMENDATIONS

Brigadier General Larry B. McAfee

The Legion of Merit has been awarded to Brig. Gen. Larry B. McAfee, M. C., U. S. Army (Retired), now of Denver, who was cited for his service from July 1943 to October 1945 as commanding general of Bruns General Hospital, Santa Fe, N. M. He was instrumental in accomplishing a notable expansion of the hospital, and through his exceptional knowledge of army medical methods he incorporated many improvements in its greatly increased functions. Through his professional ability and sound judgment, General McAfee effected the development of the hospital into one of the Army's finest tuberculosis institutions. Dr. McAfee graduated from George Washington University, Washington, D. C., in 1906 and entered the military service in 1908.

Colonel George E. Leone

The Legion of Merit has been awarded to Col. George E. Leone, M. C., U. S. Army, for performing exceptionally meritorious service as chief surgeon and chief air surgeon, Headquarters, United States Army Forces, South Atlantic, from July 1942 to September 1945. In discharging his responsibility for the health of troops within the area of his jurisdiction he early established a program of preventive medicine as a result of which the health of the command and of many transient personnel was maintained at a high level. He also maintained close liaison with the Brazilian army medical service and Brazilian public health officials, thereby contributing greatly to smooth relations with that country. The inauguration of a program of air evacuation of the sick and injured of the Brazilian army was greatly furthered by his persistent efforts. By his tact, professional ability and unremitting attention to duty Colonel Leone assured the smooth operation of the medical program throughout the South Atlantic area. Dr. Leone graduated from the University of Buffalo School of Medicine in 1929 and entered the military service July 1, 1929.

Colonel Tom F. Whayne

The America Typhus Commission Medal has been awarded to Col. Tom F. Whayne, M. C., U. S. Army, for rendering exceptionally meritorious service in connection with the work of the United States of America Typhus Commission during several important periods from Aug. 1, 1942 to March 8, 1946. In 1942 he assisted in the formulation of plans for the establishment of the commission. In 1943, as assistant military attaché at the American embassy in London he helped to develop the mutually beneficial American and British collaboration in world-wide typhus control. During 1944, and until he relinquished his post as chief of preventive medicine service of the United States Theater Service Forces in the European theater, he cooperated with the commission in planning and operating typhus control measures for troops and for the refugees and displaced persons coming under American jurisdiction in Europe. Professionally, administratively and as a distinguished liaison officer, Colonel Whayne aided the advancement and application of modern typhus control, contributing to the safeguarding of the health of troops and of populations. Dr. Whayne graduated from Washington University School of Medicine in 1931 and entered military service Dec. 5, 1934.

Colonel Louis F. Verdel

The Legion of Merit has been awarded to Col. Louis F. Verdel, M. C., A. U. S., of Northport, Long Island, and formerly of Roanoke, Va. The citation stated that he performed exceptionally meritorious service as manager of the Veterans Administration Hospital at Northport, Long Island, from June 1944 to February 1946. By outstanding leadership, ingenuity, professional skill, tact and complete disregard for his own health under difficulties due primarily to lack of equipment and trained personnel, Colonel Verdel administered this 2,000 patient neuropsychiatric hospital in such a manner as to render the highest standard of treatment and maintain a high state of morale among the patients, winning the confidence, praise and cooperation of relatives, local institutions and the medical profession. Dr. Verdel graduated from the National University of Arts and Science, St. Louis, in 1915 and entered the military service Feb. 12, 1944.

Colonel Hugh L. Prather

The Legion of Merit has been awarded to Col. Hugh L. Prather, M. C., U. S. Army, of Memphis, Tenn., who rendered exceptionally meritorious service as executive officer, Kennedy General Hospital, and later as commanding officer, Army General Hospital, Camp Butner, North Carolina, during the period August 1942 to March 1946. His attention to details of administration and patient care, says the citation, combined with the improvements he fostered in occupational therapy and recreational projects, promoted high morale and resulted in the highly successful operation of these medical installations. Colonel Prather's work was a material factor in the smooth and efficient service rendered by these hospitals. Dr. Prather graduated from Vanderbilt University School of Medicine in 1928 and entered military service the same year.

Lieutenant Colonel William H. Pennington

The Legion of Merit has been awarded to Lieut. Col. William H. Pennington, M. C., A. U. S., of Lexington, Ky., for exceptionally meritorious conduct in the performance of outstanding services in the Mediterranean Theater of Operations from Nov. 8, 1942 to May 8, 1945. The citation makes it apparent that as assistant chief of surgical service, executive officer and finally commanding officer of the 38th Evacuation Hospital, Lieutenant Colonel Pennington rendered thirty months of service to the sick and wounded of the Mediterranean theater on a level of superiority difficult to equal. During the Algerian, Tunisian and Sicilian campaigns, when hospitalization facilities were extremely limited, he was instrumental in the saving of countless lives. From the beaches of Paestum, across the Volturno, at Anzio, north of Rome, and at the Gothic Line he served as executive officer of the 38th Evacuation Hospital. In this position he assisted in the supervision of the professional and administrative services of this unit, and largely through his untiring and cheerful diligence combined with great technical skill, its record was one of exceptional medical achievement. As commanding officer during the final and victorious Fifth Army April offensive the spirit of cooperation which he drew from the personnel under his leadership enabled the 38th Evacuation Hospital to move three times and each time tear down, move, set up and receive patients all in one day's time. His performance was consistently exemplary and brought the highest credit both to himself and to the Medical Corps of the Army of the United States. Dr. Pennington graduated from the University of Louisville School of Medicine in 1928 and entered the military service April 15, 1942.

Lieutenant Colonel David M. Greeley

The United States of America Typhus Commission Medal has been awarded to Lieut. Col. David M. Greeley, M. C., A. U. S., of New York, who rendered exceptionally meritorious service as executive officer, Field Headquarters, United States, of America Typhus Commission, in England, France and Germany from October 1944 to March 1946. The citation explains that he was skilled and experienced in the professional and administrative aspects of investigating and controlling epidemic typhus and served with distinction not only the commission but also the chief military and civilian agencies concerned with typhus control. Colonel Greeley's activities on an international scale greatly strengthened typhus control throughout western Europe. Dr. Greeley graduated from Harvard Medical School in 1937 and entered military service Aug. 31, 1942.

Lieutenant Colonel Charles L. von Pohle

The Legion of Merit has been awarded to Lieut. Col. Charles L. von Pohle, M. C., A. U. S., of Chandler, Ariz., for performing meritorious services for the Division of Health and Sanitation, the Institute of Inter-American Affairs, from December 1942 to April 1946 as medical officer and associate chief of a field party in Bolivia, South America, and as chief of field party in the republic of Colombia, South America. Colonel von Pohle was credited in the citation for contributing to the war effort through his effective direction of the cooperative health and sanitation programs in Bolivia and Colombia, which programs aided the military operations in the production of strategic material and in the prevention of the development of conditions that would have impaired the war effort of the United States. His enthusiasm, vision and good judgment were responsible for the successful programs conducted. Dr. von Pohle graduated from the College of Medical Evangelists, Los Angeles, in 1932 and entered the military service in November 1942.

Lieutenant Colonel Arnold Eisendorfer

The Army Commendation Ribbon was recently awarded to Lieut. Col. Arnold Eisendorfer, M. C., A. U. S., of New York. The citation called attention to his "meritorious service and devotion to duty as neuropsychiatrist and chief neuropsychiatrist, headquarters, ASFTC, Fort Lewis, Washington, from July 1, 1944 to Jan. 11, 1946. His skilful handling, through utilization of outstanding professional ability, of large numbers of psychoneurotic soldiers resulted in the readjustment and return to duty of a high percentage of all persons processed, contributing materially to the welfare and record of the command."

Dr. Eisendorfer was also awarded the Oak Leaf Cluster with the citation "for meritorious service as chief, consultation service and chief neuropsychiatrist, Camp Abbot, Oregon, from May 15 1943 to June 4, 1944. At a time when the consultation se was an innovation and its development in many respects novel and untried, Major Eisendorfer, through his outstanding professional ability, leadership, ingenuity and untiring energy, organized and operated the neuropsychiatric consultation service and mental hygiene program so successfully that it became a model for other services and contributed materially to the effective utilization of manpower in the army."

Lieutenant Colonel Eisendorfer graduated from the University of Colorado School of Medicine, Denver, in 1928 and entered the service Oct. 21, 1942.

Major John W. Eschenbrenner

The Legion of Merit has been awarded to Major John W. Eschenbrenner, M. C., A. U. S., of Fort Worth, Texas, who was a member of the Air Surgeon's Board in Otorhinolaryngology. The citation stated that during the period from May 1944 to October 1945, Major Eschenbrenner performed an outstanding service in connection with the preparation of plans and studies for implementing the Army Air Forces Aero-Otitis Control Program. His personal direction of the irradiation program in the Eighth Air Force reflects great credit on himself and on the military service. Dr. Eschenbrenner graduated from Washington University Medical School, St. Louis, in 1929 and entered military service Feb. 4, 1943.

Captain Carlo Henze

The Legion of Merit has been awarded to Capt. Carlo Henze, M. C., A. U. S., of New York. He rendered exceptionally meritorious service as a medical intelligence officer engaged in the collection of information concerning German research programs of major concern to the Allied forces during the period December 1944 to April 1945. The citation mentions his imagination, skill and ingenuity, which made possible the successful completion of an investigation which brought to light the complete information regarding these German projects and their possible relationship to comparable Japanese programs. Captain Henze's accomplishments in this field were a major contribution to the medical intelligence of the Allied forces. Dr. Henze graduated from the University of Innsbruck School of Medicine, Austria, in 1933 and entered the military service Jan. 20, 1941.

Captain Amos R. Little

The Air Medal, the Legion of Merit and the Army Commendation Ribbon were recently awarded to Capt. Amos R. Little Jr., M. C., A. U. S., of Helena, Mont. The citations read in part as follows: "For meritorious achievement in aerial flight on June 15, 1944 at Crown Peak, Roosevelt National Forest, Colorado. On flying to the scene of an aircraft accident on a mountain peak at an altitude of 11,000 feet, Captain Little made a daring and exceptionally dangerous parachute jump at an altitude of only 500 feet above the peak in order to render assistance and medical care to the survivors. Despite the jagged and rocky character of the landing area, and snow and ice, he performed a highly successfully jump and was instrumental in possibly saving many lives. During the period from November 1943 to April 1946 he made a total of fifty-one parachute jumps under hazardous conditions for the purpose of rendering medical aid to the victims of accidents. His outstanding work in the field of medical research and rescue technic reflects great credit on himself and on the armed forces of the United States. Dr. Little graduated from Johns Hopkins University School of Medicine in June 1942 and entered the military service Oct. 1, 1943.

Captain Monroe J. Romansky

The Legion of Merit has been awarded to Capt. Monroe J. Romansky, M. C., A. U. S., of Washington, D. C., who rendered distinguished service in penicillin research at the Army Medical Center, Washington, D. C., from July 1942 to October 1945. The citation stated that his pertinacity in research, professional skill and devotion to duty resulted in improvements in the technics for administration of penicillin, thereby saving lives and alleviating pain and suffering. Dr. Romansky graduated from the University of Rochester School of Medicine in 1937 and entered the military service July 25, 1942.

CORRECTION

Major Harry Most.—Under Awards and Commendations in The Journal, March 22, page 874, Dr. Harry Most should have been referred to as Major instead of Captain.

VETERANS ADMINISTRATION

VETERANS ADMITTED TO HOSPITALS IN 1946

A total of 458,749 veteran-patients were admitted to Veterans Administration and non-Veterans Administration hospitals during the calendar year 1946, the Veterans Administration reports. General medical and surgical patients accounted for 83.19 per cent of the admissions, and neuropsychiatric patients for 11.77 per cent of the total. The smallest group, 4.27 per cent of the total, was the tuberculous patients. The remainder of the admissions, 3,540, were nonveteran patients including employees taken ill on the job and treated before removal to civilian hospitals, veterans of allied forces and emergency cases admitted pending removal to other hospitals. Slightly less than 50 per cent of the total number of neuropsychiatric admissions were classified as psychotic cases, the remainder being neuropsychiatric disorders other than psychosis, such as organic conditions of the nervous system, character and behavior disorders and the psychoneurotic. During the fiscal year 1946, neuropsychiatric patients discharged from hospitals had an average stay of 197 days, compared with 186 days for tuberculous patients and 34 days for general medical and surgical patients.

PARAPLEGIC CENTERS

The Veterans Administration has established seven paraplegic centers in hospitals strategically located from coast to coast. These centers, especially designed to treat veterans with spinal cord injuries, are in operation in Veterans Administration hospitals at Framingham, Mass.; Memphis, Tenn.; Van Nuys, Calif.; Staten Island, N. Y.; Richmond, Va.; Bronx, N. Y., and Hines, Chicago.

Because of a general shortage of doctors, physical therapists and others qualified to treat paraplegic patients, Veterans Administration personnel skilled in this field have been assembled at the seven centrally located hospitals. Today, because of modern medical science and developments in the field of physical medicine, many persons with paraplegia are able to lead active, productive lives. To treat each case properly, the services are needed of a medical team consisting of a neurologist, neurosurgeon, psychiatrist, urologist, plastic surgeon, orthopedic surgeon, physical therapist, occupational therapist, corrective physical rehabilitation officer, educational retraining officer, prevocational shop supervisor, social worker and nurses. The Veterans Administration has about 1,200 veteran patients suffering from injuries to the spinal cord.

PERSONAL

Dr. L. S. Eagleburger of Stevens Point, Wis., has been appointed chief medical director of the Wausau subregional office of the Veterans Administration. Dr. Eagleburger served in the Army during the recent war, and twenty-eight months of his service was in the southwest Pacific area.

Dr. O. K. Timm, recently released from the Army after more than two years of foreign duty, has been appointed clinical director of the Veterans Administration Hospital, Danville, Ill. Dr. Timm served with the Veterans Administration prior to entering the military service. In the new position he succeeds Dr. George D. Rice, who was transferred to Tomah, Wis., as manager of a new veterans' hospital.

PHYSICIANS SEPARATED FROM SERVICE

ARMY MEDICAL CORPS OFFICERS RECOMMENDED FOR/OR RELIEVED FROM ACTIVE DUTY

California

Berger, Melvin M..........Los Angeles
Brock, William..........San Francisco
Corwin, Edward H.........Los Angeles
DeLuca, Joseph...............San Diego
King, Jack W.............Los Angeles
Layton, William C..........San Mateo
Longley, James E............San Diego
Mason, Marshall I............San Jose
Mulder, Harold H.............Compton
Schunke, Gustave B.........Inglewood
Tirrell, Walter M...........Los Angeles
Todd, Max A..................Eureka

Colorado

Temple, Herbert V.............Haybro
Towbin, Samuel................Denver

Connecticut

Coe, Relvert J...............New Haven
Klemperer, Wolfgang W.....New Haven
Ludwig, Edward W............Ansonia

District of Columbia

Hynes, William P..........Washington
Lenhoff, Charles D.........Washington

Florida

Frank, Frederick W..............Miami

Georgia

Blanchard, Mercer C.........Columbus
Powell, John E. Jr..........Villa Rica

Illinois

Bond, Alan B..................Chicago
Gratkins, Leonard V...........Chicago
Ivan, Michael M...............Chicago
Jonas, William P...............Chicago
Kirby, William J..............Chicago
Kirk, Max L...........Mount Vernon
Kirkwood, Roger T.......Lawrenceville
Kissinger, Charles C...............Anna
Lams, Louis.......................Elgin
Looby, William E.......Highland Park
Ludwig, Irving I..............Chicago
Qualmann, Lawrence R..........Chicago
Rayer, Kenneth N............Kankakee
Tanny, Michael................Bellwood
Tratt, Elliott M..................Morris
Walaver, John H. Jr........Springfield

Indiana

Baumrucker, George O......Indianapolis
Cline, Kenneth L...............Bremen
Fitzpatrick, James S........Edwardsport
Ludin, Albert P...........East Chicago
Martin, Joe M..........West Lafayette
Miller, Leonard C..........Indianapolis
Sidebottom, Earl W...........Rushville
Smith, Roger C............New Haven
Sutton, William E............Edinburg
Swihart, John J...................Argos

Iowa

Cartwright, Forrest P....Grand Junction
Summers, Thomas B.............Ardon

Kentucky

Caldwell, Milton V............Newport
Donnelly, Arthur D. Jr...Bowling Green
Lake, Willard................McHenry
Traub, David S..............Louisville

Louisiana

Caldwell, Gene D.............Shreveport

Maine

Tougas, Raymond A..........Brunswick

Maryland

Houska, Henry J..............Baltimore
Louzan, John............Silver Springs

Massachusetts

Buckley, Robert W.............Beverly
De Persio, John D...............Boston
Furie, Robert J..............Worcester
Gilmore, Ray S..................Lowell
Horne, Elwood O...........Shrewsbury
Kirkendall, Henry L..........Worcester
Levine, Reevan I............Dorchester
Lewis, Fred W.....................Groton
Manconi, Salvatore A...........Revere
Ruben, Maurice R..........Dorchester

Michigan

Alpiner, Sam..............Battle Creek
Boyle, Albert J.................Detroit
Francis, Donald J..............Pontiac
Ludwig, Claud A...............Lansing

Minnesota

Anderson, Charles L............Duluth
Coventry, William D............Duluth
Litman, Morris H..........Minneapolis
Louisell, James M..............St. Paul
Rewbridge, Allan G.........Minneapolis
Smith, Lloyd A.................Balaton

Mississippi

Liberto, Joseph R..........West Point

Missouri

Broyles, Watkins A............Bethany
Kienberger, Paul A...............Butler
Londe, Sol.............Webster Groves
Smith, Robert W...........Kansas City

Nebraska

Levin, Stanley L...............Lincoln

New Jersey

Cameron, Clarence P.....Sommers Point
Charles, Seymour...............Sussex
Cooley, Justus H..........Bound Brook
Edwards, Walter R............Trenton
Hardy, Geza R........New Brunswick
Heller, George..............Englewood
Lakiszak, Roman T..........Jersey City
Lynch, Michael F...............Linden
Lynn, Irving I...............Jersey City
Merliss, Harry...................Newark
Trambert, Harry L.............Bayonne

New York

Carroll, Francis L...............Oswego
Chimera, Marion J.............Corning
Clancy, John B...................Albany
Comer, Bartholomew J.....Corona, L. I.
Edelman, Isidore S.............Brooklyn
Edmonds, Albert M..............Clayton
Goodman, Howard C.............Buffalo
Harris, Basil Jr..............New York
Jacobson, Seymour B.........New York
Kinder, Frederick S...........New York
Kingsley, Harry D............Rochester
Kingsley, Sumner B................Rome
Kirschner, Paul A............New York
Kornblum, Stanley A.........Monticello
Krasnoff, Harry M............Brooklyn
Kraunz, George J..................Rome
Leder, Harold L.............New York
Liebolt, Frederick L..........New York
Linder, James H.............New York
Liotta, Salvatore....Kew Gardens, Hills
Lipani, John G...............Brooklyn
Marshall, Irving A............Brooklyn
Mason, Bernard............Middletown
Neuman, Ellsworth T......Poughkeepsie
Plutino, Vincent B.................Bronx
Ravich, Robert A..............Brooklyn
Richardson, Herbert A...........Amenia
Rosenbusch, Justin.............Brooklyn
Sanders, Arnold R...........New York
Solomon, Marvin N.................Bronx
Straub, Leonard R......Jackson Heights
Tanner, Charles J. Jr..........Hornell

New York—Continued

Todd, Hobart H. Jr...........New York
Tomao, Anthony L............Brooklyn
Tortora, John M...............Brooklyn
Trantum, Donald D.........Jamestown
Walker, Arthur H............Rochester
Weiss, Andor A..............New York
Wheeler, William T...........Boonville

North Carolina

Nesbitt, Isaac F..............Edneyville
Thompson, Kearns R. Jr.......Reidsville

Ohio

Bailey, Robert C..............Lakewood
Campbell, Howard R.............Dayton
Campbell, Leland E............Cleveland
Curtiss, Charles F.............Columbus
Gardiner, Alfred S...........Middletown
Hamilton, Joseph W...............Akron
Horrocks, Jack B...........South Euclid
Kleinhenz, Henry E............Cleveland
Landen, Cornelius C...........Columbus
Lynch, John C...................Athens
Schaber, Jack F...............Cincinnati

Oklahoma

Gilbert, John B...........Oklahoma City
King, Everett G.................Duncan
Toma, Kay.......................Granite

Oregon

Smith, William P.............Sherwood

Pennsylvania

Baeslack, Harold A............Swissvale
Boyle, Joseph R................Wanamic
Casey, Adrian V................Scranton
Conte, Nicholas F..............Scranton
Gilligan, Frank P.................Ashley
Ginieczki, Chester J.........Philadelphia
Imber, Irving......................Reading
Kirk, Daniel L..............Waynesboro
Landay, James P............Philadelphia
Little, George W. W.........Homestead
Marx, Halvey E...............Allentown
Mead, Lewis J. G.............Yorktown
Miller, Charles W................Ashland
Revitch, Eugene............Philadelphia
Rex, Richard O..............Pen Argyl
Smith, Howard B...........Philadelphia
Szakalun, Leo S............Philadelphia
Tipping, James S.............Pittsburgh
Todhunter, William D.........Johnstown
Toll, William G....................Oaks

Tennessee

Chambers, John M. Jr..........Memphis
Lowrance, Preston B........Chattanooga
Myers, William T..............Nashville
Sebulsky, Lawrence L..........Memphis
Smith, Frederick W............Nashville

Texas

Barnes, Johnson P..............Houston
Brelsford, Homer G...............Dallas
Byrd, Houston F...................Dallas
Dill, Emory D. Jr..................Dallas
Gauntt, William C.............Rochester
Kimbrough, Ernest M...........Haskell
Marx, Melvin Jr..............Clarksville
Martin, Frank M...........San Antonio

Washington

Berger, Knute E..................Seattle
King, Robert L....................Seattle
Kintner, William C. Jr...........Seattle
Mansfield, Charles O.............Pateros

West Virginia

Carney, Harry A.............Charleston
Howard, Arthur..............Huntington
Wellman, Garland O.............Kenova

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

ARKANSAS

State Medical Meeting at Little Rock.—The seventy-first annual session of the Arkansas Medical Society will be held in the Robinson Auditorium, Little Rock, April 17-19 under the presidency of Dr. H. King Wade, Hot Springs. At the opening general session Thursday morning Dr. T. Leon Howard, Denver, will speak on "Renal Pathology in the Making." The house of delegates will meet Thursday afternoon. At the evening public meeting Dr. Harrison H. Shoulders, Nashville, Tenn., President, American Medical Association, will discuss "Some Problems in the Economics of Medical Care." Dr. Geza de Takats, Chicago, will discuss the surgical management of hypertension Friday morning. Among others Drs. Samuel Fomon, New York, will speak on "The Rhinoplastic Operation"; Henry Packer, Memphis, Tenn., "New Drugs in the Treatment of Malaria"; Alexander Marble, Boston, "Present Day Treatment of Diabetes"; Warfield M. Firor, Baltimore, "The Surgical Aspects of Cancer." A memorial service will be held Friday morning at 11:40 in joint session with the Woman's Auxiliary to the Arkansas Medical Society for the twenty-four members of the society who have died since the last meeting.

CALIFORNIA

History of Alameda County Medical Association.—Seven physicians met in the Court House in San Leandro on Aug. 18, 1860 to "draft a constitution and by-laws for the government and regulation of the prospective association." This was the beginning of the Alameda County Medical Society, which has just published a history of the organization covering a period of some eighty-five years. The origins of the book were fostered by the late Dr. Frank R. Makinson and since his death by Dr. Milton H. Shutes of Piedmont. An interesting account of the first doctors to come to California, it shows briefly the part played by them in the development of California railroads, the handling of epidemics and the fight to raise the standards of medical practice in the community. Here are the names of speakers at numerous meetings, among whom were medical authorities of that day from far and wide. The origins and development of hospitals, the expulsion of certain members of the society in the early days for advertising in newspapers and for the preparation and dispensing of "patent" medicines are reviewed. One member of the society, Dr. George C. Pardee, was elected governor of California in 1902 by a large majority. He was "one of the most beloved citizens in the history of Oakland." In 1904 it was suggested to the society that $150 be raised among the members as a contribution to the $25,000 fund that the American Medical Association proposed to create for the family of the late Dr. Walter Reed of yellow fever fame. At a meeting in 1877 it was moved and carried "that the members of the association dispense with smoking during the time of the society's sessions." Dr. J. Horatio Bundy, a member, is said to have introduced cascara sagrada to medicine. In 1917 a compulsory health bill patterned after certain European plans was devised, but at the election in the following year it was defeated by nearly 3 to 1; in Alameda County by 58,271 to 16,546. Adding to the interest of this volume are pictures of pioneer California physicians and of houses in which they lived and carried on the practice of medicine.

CONNECTICUT

Conference of Presidents and Secretaries.—The semiannual conference of the presidents and secretaries of the eight component county associations of the Connecticut State Medical Society was held in New Haven on March 20. Thomas A. Hendricks, Chicago, secretary, Council on Medical Service, American Medical Association, addressed the meeting on "Responsibilities of the Secretary of a County Medical Society." A talk on the activities of state medical journals was given by John E. Farrel, managing editor of the *Rhode Island Medical Journal*. Dr. Cole B. Gibson, Meridan, president of the Connecticut society, presided.

State Medical Meeting.—The Connecticut State Medical Society will hold its 155th annual meeting April 28-30, under the presidency of Dr. Cole B. Gibson, Meridan. The general session will be held in the high school building at Hamden. The house of delegates will meet at the New Haven Medical Association Building, New Haven, Monday afternoon. Among the speakers for the general program will be:

Dr. Alvin L. Barach, New York, Physiologic and Antibiotic Therapy in Bronchial Asthma.
Dr. Elaine P. Ralli, New York, Management of the Complications of Diabetes.
Dr. Richard Schatzki, Boston, Lesions of the Antrum of the Stomach.
Dr. W. Jason Mixter, Boston, Present Status of Management of Ruptured Intervertebral Disk.
Dr. J. William Hinton, New York, End Results and Indications for Thoracolumbar Sympathectomy.
Dr. George A. Perera, New York, Role of Sodium Restriction in Hypertension.
Dr. Herbert C. Maier, New York, Diagnosis and Treatment of Bronchiectasis.
Dr. Richard H. Sweet, Boston, Diagnosis and Treatment of Carcinoma of the Esophagus.
Dr. Franz J. Ingelfinger, Boston, Clinical Significance of Changes in Small Intestinal Function.
Dr. Samuel A. Levine, Boston, Management of Acute Coronary Thrombosis and Its Complications.

At a symposium on the treatment of peripheral vascular diseases Tuesday afternoon Drs. A. Wilbur Duryee and Irving S. Wright, both of New York, and Dr. John Homans, Boston, and at the Wednesday afternoon symposium on psychoneurosis Drs. Jacob E. Finesinger, Boston; Benjamin V. White, Hartford, and Carl A. L. Binger, New York, will speak. Section meetings to be addressed by various out of state speakers are scheduled for Tuesday and Wednesday afternoons. The annual meeting of the Woman's Auxiliary will be held on Tuesday afternoon at the New Haven Country Club. The annual dinner is scheduled for Tuesday evening at the New Haven Lawn Club.

FLORIDA

Neurology and Psychiatry Society.—The first annual meeting of the Florida Neurology and Psychiatry Society will be held April 20 at the McAllister Hotel in Miami, preceding the annual meeting of the state medical association. The permanent organization of this group is being arranged by Drs. H. Mason Smith, Tampa, and William H. McCullagh, Jacksonville. The group will be addressed by Dr. James B. Lyerly Jacksonville, on "Surgical Relief of Pain."

Annual Meeting of State Association.—The seventy-third annual meeting of the Florida Medical Association will be held in the Municipal Auditorium, Miami, April 21-23 under the presidency of Dr. Shaler Richardson, Jacksonville. The business meeting will be Monday afternoon and Tuesday morning, with election of officers scheduled for Wednesday. Besides numerous speakers, members of the association, Dr. John H. Dunnington, director, Institute of Ophthalmology, New York, will give an address Tuesday morning on "The Eye in Thyroid Disease." The Woman's Auxiliary will meet Monday and Tuesday at the McAllister Hotel. Various sections and specialty groups will hold meetings, including among others the General Practice of Medicine Society. All persons interested in the postconvention tour to Cuba are requested to communicate with Dr. Carlos P. Lamar, 1010 Huntington Building, Miami.

Temporary Permits to Practice.—To alleviate the medical needs of communities that are either wholly without or greatly in need of a physician, temporary permits to practice medicine within the state are being granted by the Board of Medical Examiners of Florida. The signed request for such services in a certain town or community must originate with the local county medical society, whose prerogative it will be to decide whether or not temporary licentiates shall come among them. The holder of a temporary permit must appear for the next regular examination (June and November); until that time he is expected to remain in his assigned community until licensed by the board. To be eligible to apply for a temporary permit, the applicant must have a diploma from an acceptable medical college of the United States or Canada. Graduates of unacceptable medical schools must take (and receive credits for) a senior year's work in an acceptable medical school of the United States or Canada or must satisfactorily complete one year's assistant residency (following one year's internship satisfactorily completed in an approved hospital) or a residency or a fellowship in medicine, surgery or other specialty in an approved hospital. Also the Florida law requires as an additional prerequisite a certificate of proficiency from the Florida Basic Science Board. The temporary permit need not be recorded. All physicians, however, register annually with the state board of health, paying a fee of $1, and must be approved or disapproved by the state bureau of narcotics for a special narcotic stamp, which is received with the narcotic permit from the collector of internal revenue in Jacksonville or the nearest center. Necessary forms to be filled out by the applicant and by the officers of the county society and then duly notarized may be obtained from Harold D. Van Schaick, Secretary, State Board of Medical Examiners, 2736 Southwest 7th Avenue, Miami 36.

ILLINOIS

Graduate Education for Local Physicians.—The Illinois State Medical Society held a meeting in East St. Louis April 3 at which authorities in various fields of medicine brought to local physicians of the Tenth Councilor District the newer trends of their specialties. It was eighth in a series of ten such meetings to be held by the society within the last year. The ninth and tenth conferences are scheduled for Mattoon April 17 and Monmouth April 24.

Personal.—Dr. Leonard M. Schuman, Springfield, U. S. Public Health Service, has been appointed chief of the division of venereal disease control in the state department of public health. Dr. Schuman was a district health superintendent with headquarters at Woodstock from August 1941 until July 1943, when he became assistant chief of the division of local health administration, Springfield, until August 1945. He is a graduate of Western Reserve University, Cleveland, 1940.

Northwestern Affiliates with Children's Memorial Hospital.—By the affiliation of Northwestern University Medical School with the Children's Memorial Hospital, Chicago, the faculty and the hospital staff will cooperate in research and teaching related to pediatrics. Further correlation of the work of the two institutions has been arranged, with senior medical students serving part time at the hospital, and staff members of Children's Memorial using the Northwestern laboratories for research. The 252 bed hospital had 3,955 inpatients in 1946 with 1,101 additional patients served in the hospital's clinic. Seventy-one per cent of the care was given free of charge.

Chicago

Personal.—Dr. George K. Fenn, associate professor of medicine, Northwestern University Medical School, and chief of staff at St. Luke's Hospital since 1943, was elected president of the Chicago Heart Association March 4.

Research at Institute for Psychoanalysis.—At the meeting of the National Advisory Mental Health Council in Washington, D. C., in January the council approved three grants for research to be conducted at the Chicago Institute for Psychoanalysis on studies of mental health in connection with physical diseases: $5,000 for a two year study of diabetes mellitus, $4,000 for a two year study of atrophic arthritis and $5,000 for a study of ulcerative colitis.

Ninety Days for Practicing Without License.—Dr. Amante Rongetti, 2900 Van Buren Street, has been sentenced to a ninety day term in the county jail for practicing medicine without a license. Dr. Rongetti, whose medical license was revoked by the state after he had been sentenced to fourteen years on manslaughter charges in 1929, was pardoned May 20, 1942 and arrested again in June 1943. The Supreme Court has ruled that Rongetti must serve the ninety day sentence.

Symposium on the Tuberculosis Problem.—A symposium on recent developments in the tuberculosis problem in Chicago will be held at 8 p. m. April 10 at the Bismarck Hotel at a joint meeting of the Chicago Tuberculosis Society and the Tuberculosis Institute of Chicago and Cook County. Speakers for the meeting are Dr. James H. Hutton, chairman, Tuberculosis Control Committee of the Chicago Medical Society; Dr. A. W. Newitt, Chicago tuberculosis control officer; E. F. Kleinschmidt, director, Tuberculosis Institute of Chicago and Cook County, and Mr. W. P. Shahan, director, Tuberculosis Association of Illinois. Reservations for the dinner to precede the meeting must be made by April 8 through George W. Holmes, secretary, telephone Juniper 3500.

INDIANA

New Obstetric and Gynecologic Society.—An inaugural dinner meeting for the newly organized Indianapolis Obstetrical and Gynecological Society will be held April 9 at the Athletic Club, Indianapolis. Dr. Frederick H. Falls, professor and head of the department of obstetrics and gynecology, University of Illinois, Chicago, will give an illustrated discussion on ectopic pregnancy. The officers of the society, organized January 22, are Drs. Charles O. McCormick Sr., Indianapolis, president; Carl Habich, Indianapolis, vice president, and Lawson J. Clark, Indianapolis, secretary-treasurer.

Third Industrial Health Conference.—The third industrial health conference will be held at Indiana University School of Medicine, Indianapolis, April 16, under the sponsorship of the Indiana State Medical Association committee on industrial health, Indiana University School of Medicine department of public health and the Indiana State Board of Health division of industrial hygiene. The meeting is open to physicians, personnel directors or safety directors. There are no registration fees. Among the speakers will be Dr. Henry H. Kessler, Newark, N. J., member, Council on Industrial Health, American Medical Association, on "Disability Evaluation"; Dr. L. E. Hamlin, medical director, American Brake Shoe Company, Chicago, "Industrial Disease of the Chest"; Dr. Leonard F. Weber, associate professor of dermatology, University of Illinois College of Medicine, Chicago, "Industrial Dermatoses"; Lawrence T. Fairhall, Ph.D., U. S. Public Health Service, Washington, D. C., "Toxicology of Heavy Metals," and Anna M. Baetjer, D.Sc., assistant professor of physiological hygiene, Johns Hopkins University, Baltimore, "Control of Upper Respiratory Diseases."

MASSACHUSETTS

Dr. Rivers to Give the Cutter Lecture.—The Harvard School of Public Health announces that Dr. Thomas M. Rivers, director of the Hospital of the Rockefeller Institute for Medical Research, New York City, will deliver the Cutter Lecture on Preventive Medicine, April 22, 5 p. m., in amphitheater D of Harvard Medical School, Boston. His subject will be "Certain Public Health Aspects of Infectious Diseases." The lectures have been held since 1912. The medical profession, medical and public health students and others interested are cordially invited.

Physicians Art Association.—The Massachusetts Physicians Art Association has been established to stimulate interest in drawing, painting, sculpture and photography. Any member of the Massachusetts Medical Society may join the association by sending $2, the annual dues, to the treasurer, Dr. Robert W. Buck, 5 Bay State Road, Boston. An exhibition will be held in conjunction with the annual meeting of the Massachusetts Medical Society, May 20-22. Additional information may be had by writing Dr. Somers H. Sturgis, Massachusetts General Hospital, Boston 14.

MICHIGAN

Alumni Clinic Day.—One of the speakers at Wayne University Alumni Clinic May 14 will be Dr. Emery A. Rovenstine, professor of anesthesia, New York University College of Medicine, and director, division of anesthesia, Bellevue Hospital, New York, on the subject "Nerve Block Therapy." Dr. Rovenstine in 1938 was guest director of anesthesia at Oxford University, England, and in 1939 guest professor of anesthesia at the University Rosario in Argentina.

NEW JERSEY

Society News.—Dr. Herbert T. Kelly, Philadelphia, chairman, committee on nutrition, Medical Society of the State of Pennsylvania, presented a paper on "Nutritional Integration in Psychosomatic Medicine" before the Middlesex County Medical Society, Metuchen, February 19.

Annual Meeting of State Medical Society.—The 181st annual meeting of the Medical Society of New Jersey will be held in Atlantic City in Haddon Hall, April 22-24, under the presidency of Dr. Frank G. Scammel, Trenton. Among the speakers Wednesday are the following physicians:

Robert E. Gross, Boston, Congenital Atresias of the Alimentary Tract.
Joseph C. Birdsall, Philadelphia, Diagnosis and Treatment of Carcinoma of Prostate.
Abraham E. Rakoff, Philadelphia, Use and Abuse of the Endocrines in Obstetrics and Gynecology.
Franklin L. Payne, Philadelphia, Diagnosis and Management of Endometriosis.
Paul C. Swenson, Philadelphia, Roentgen Findings in Functional Disturbances of Gastrointestinal Tract.
Albert F. R. Andresen, Brooklyn, Allergy in Relation to Gastrointestinal Diseases.
Max M. Strumia, Bryn Mawr, Pa., Blood Proteins.
J. Scott Butterworth, New York City, Advances in the Diagnosis and Treatment of Heart Disease.
Oswald R. Jones, New York City, The General Practitioner and Diseases of the Chest.
Hattie E. Alexander, New York, Newer Concepts and Treatment of Hemophilus Influenzae Meningitis.
Samuel Z. Levine, New York City, Metabolism and Feeding of the Premature Infant.
F. Johnson Putney, Philadelphia, subject unannounced.

General sessions will be held Tuesday afternoon and Thursday morning. An informal dinner dance will be held Wednesday at 7:30 p. m.

NEW MEXICO

State Medical Meeting and Rocky Mountain Conference.—The 1947 annual meeting of the New Mexico Medical Society will be held April 30 to May 3 in Albuquerque, N. M., in conjunction with the fourth meeting of the Rocky Mountain Medical Conference, comprising Colorado, Montana, New Mexico, Utah and Wyoming. The annual business meeting of the New Mexico society will open at 10 o'clock April 30, Dr. Charles A. Miller, Las Cruces, N. M., president, presiding. Among the physicians addressing the conference are the following from the University of Illinois College of Medicine, Chicago:

Warren H. Cole, Treatment of Gallbladder Disease.
Henry G. Poncher, Diagnosis and Treatment of Anemia in Infants and Children.
Ford K. Hick, Management of Respiratory Emergencies.
George E. Wakerlin, Clinical Application of Recent Advances in Gastrointestinal Physiology.
Henry E. Michelson, Minneapolis, Minn., Dermatologic Diagnosis and Treatment for the General Practitioner.
Alfred W. Adson, Rochester, Minn., Diagnosis of the Scalenus Anticus Syndrome.

Other doctors of medicine addressing sessions of the conference include:

Howard C. Naffziger, San Francisco, Neurologic Diagnosis as It Especially Concerns the Internist and General Practitioner.
Wendell G. Scott, St. Louis, Use of X-Rays in Diagnosis of Lesions of Large Intestine and Rectum; Low Back Pain and the Important Part That the Interpretation of Properly Taken Roentgenograms Plays in This Problem.

Ten and fifteen minute question periods will follow the addresses. Round table luncheons will be held at the Alvarado Hotel, with informal discussions by guest speakers. There will be two on general medicine and one each on pediatrics and general surgery. The banquet Friday will be informal.

NEW YORK

Personal.—Dr. Charles M. Carpenter, associate professor of bacteriology, University of Rochester School of Medicine, has been granted two months' leave of absence to direct a commission to survey certain aspects of the venereal disease problem in the Pacific theater for the Surgeon General of the Army.

University News.—Grants for cancer control studies have been made to the following two University of Rochester professors by the National Institute of Health, of which the National Cancer Institute is a unit: Dean S. Tarbell, Ph.D., now working under a Guggenheim fellowship at Oxford University, England, and John R. Murlin, Ph.D., professor of physiology, emeritus.

New York City

Psychiatric Forum.—At a meeting of the Brooklyn State Hospital Psychiatric Forum April 10 at 8:30 p. m. in the auditorium at Brooklyn State Hospital, 681 Clarkson Avenue, Brooklyn, Dr. Lauretta Bender, New York, will speak on "Schizophrenia and Childhood."

Memorial Lecture.—Dr. F. Peyton Rous, member emeritus of the Rockefeller Institute for Medical Research, delivered the Adam M. Miller Lecture on "Cancer as an End Product" at the Polhemus Memorial Building, Brooklyn, March 20. The lecture is sponsored by the Long Island College of Medicine.

Gift to Medical Center Fund.—The New York University-Bellevue Medical Center Fund has received a $100,000 gift in honor of the centennial anniversary of the birth of the late Jacob H. Schiff. The gift was made jointly by the Mortimer and Adele Schiff Foundation, Mrs. Felix M. Warburg and Frederick M. Warburg.

Research at Columbia University.—Among grants recently received by Columbia University, Dr. Frank D. Fackenthall, acting president, announced, were $44,225 from the U. S. Public Health Service for medical research, $37,815.50 from the American Cancer Society, Inc., and $20,700 from the National Foundation for Infantile Paralysis for research in muscle spasm and atrophy.

Tuberculosis Conference.—The Tuberculosis Sanatorium Conference of Metropolitan New York held its thirty-seventh clinical session at Cornell University Medical College, February 19, Dr. William G. Childress, Valhalla, chairman, presiding. Dr. Isadore D. Bobrowitz, medical superintendent, Municipal Sanatorium, Otisville, discussed "Prognosis and Clinical Significance of Minimal Tuberculosis" and Dr. William H. Roper, director, research section, Fitzsimons General Hospital, Denver, discussed the U. S. Army Medical Department's Section for Research on Minimal Tuberculosis.

OHIO

Personal.—Dr. Charles C. Cropper, Lynchburg, will complete fifty years of practice in Highland County next month. He is a graduate of the former Louisville Medical College, Louisville, Ky., and has served as a member of the board of public affairs at Lynchburg for thirty years.

Cleveland Health Museum.—The 1946 annual report of the Cleveland Health Museum, a privately supported institution which has been serving the public for six years, shows that 36,669 persons saw exhibits in the main building and many times that number at extension and loan exhibitions. Seventeen lectures were given during the year by members of the staff to outside agencies. The museum instituted last May three minute radio health broadcasts of station WTAM.

Rat Control Program.—The City of Cleveland Division of Health carried out a rat control program in the Goodrich area last month. A sound movie and a lecture on ratproofing of residences, old and new methods of rat killing and a demonstration comprised the program. Area projects of this nature are conducted in an effort to bring fundamental health services to the public on a neighborhood basis. Following a special rubbish collection to help the cleanup of premises, a "bait station" trailer was assigned to the neighborhood for several days to distribute free rat poison.

PENNSYLVANIA

Hospital News.—The Civilian Production Administration has approved the construction of a $1,463,061 building at Philadelphia State Hospital, Philadelphia. The new three story structure will house patients who are convalescing and capable of being employed at useful occupational work at the hospital.

Bone Bank Established.—Establishment of a bone bank to provide a constant supply of bone for grafting operations was announced February 21 by Dr. Leonard F. Bush, the George F. Geisinger Memorial Hospital, Danville, Pa., in a talk before the orthopedic section of the New York Academy of Medicine. The bank, already functioning, was established after experimentation at the New York Orthopedic Dispensary and Hospital. Dr. Bush said the principal value of the bank is that it eliminates the delay in having to perform simultaneous operations to remove the bone from the bone donor and to transplant it in the patient.

Postgraduate Psychiatric Training.—The Western State Psychiatric Institute and Clinic, Pittsburgh, training and research institution of the state mental hospital system, recently sponsored a number of graduate training activities for professional personnel. Last April a conference was held to provide opportunities for consideration of topics demanding cooperative thinking and activities. Specific workshops on professional problems were held after the conference, one on psychiatric treatment attended by clinical directors and physicians from state mental hospitals. A second seminar was held for clinical psychologists. In conjunction with the School of Nursing of the University of Pittsburgh, two meetings were held for graduate nurses, one for those interested in administration and another for nursing educators, which was attended by representatives from New Jersey, Ohio and Kentucky.

Philadelphia

Annual Health Institute.—The seventeenth annual health institute of the Woman's Auxiliary to the Philadelphia County Medical Society will be held April 8 at the auditorium, Philadelphia County Medical Society, Philadelphia. Dr. Pascal F. Lucchesi, Philadelphia, will discuss "Future Plans of the Philadelphia General Hospital," of which he is medical director and superintendent. Other speakers include Dr. Francis F. Borzell, vice speaker, House of Delegates, American Medical Association; Mrs. Edna M. Kech, Harrisburg, director, division of health education, State Department of Health; Dr. M. Clay Stayer, director, bureau of tuberculosis control, State Department of Health, and Dr. Norris W. Vaux, Philadelphia, secretary of health, State of Pennsylvania.

UTAH

Surgical Meeting at Ogden.—The second annual meeting of the Ogden Surgical Society will be held May 15-17 at the Thomas D. Dee Memorial Hospital, Ogden. Among the guest speakers will be Drs. Alton Ochsner and Champ Lyons, Tulane University of Louisiana School of Medicine, New Orleans; Herbert D. Adams, Lahey Clinic, Boston; Edgar V. Allen, Mayo Clinic, Rochester, Minn.; Kenneth C. Swann, University of Oregon Medical School, Portland; Paul B. Magnuson, Northwestern University Medical School, Chicago. The annual banquet will be held Friday night.

WASHINGTON

Neurologic Society.—The Seattle Neurological Society has lately been formed with William F. Windle, Ph.D., president; Paul G. Flothow, vice president, and R. Frederick Becker, Ph.D., secretary-treasurer. Full membership is open to all practicing neurologists, neurosurgeons, neuropsychiatrists or neuropathologists in Seattle and its environs and to others interested in these fields.

New Medical-Dental Building. — Ground was broken March 5 for the medical, dental and the nursing building at the University of Washington, Seattle, by Raymond B. Allen, University president, and Dr. Lee P. Sieg, Ph.D., former president. Among the guests were Drs. Ross D. Wright, Tacoma, president of the state medical association; Clarence A. Smith, Seattle, editor of *Northwest Medicine*, and Frank H. Wanamaker, president of the King County Medical Society. Construction started immediately.

GENERAL

Influenza.—According to reports from state health officers to the U. S. Public Health Service, Washington, D. C., influenza was epidemic last month in Texas, Colorado, Kansas, Georgia, Arkansas, Indiana, South Carolina and Virginia, which states accounted for 90 per cent of the total number of cases in the nation, 7,974, for the week ended March 1.

International College of Surgeons Purchases Headquarters.—The International College of Surgeons, U. S. Chapter, has acquired 1516 Lake Shore Drive, Chicago, the former Edward Blair residence, as a permanent home. The building, a four story fireproof structure designed by McKim, Meade and White, will house the offices of the college, library and projected museum and assembly rooms of the organization.

New Society to Study Arteriosclerosis.—The increasing importance of arteriosclerosis as a cause of death and a source of physical and mental disability makes urgent the early institution of effective measures for its control. Clinicians and experimentalists interested in an intensified investigation of all phases of this disease are invited to join the new American Society for the Study of Arteriosclerosis and are urged to get in touch as soon as possible with Dr. Otakar J. Pollak, Wilmington General Hospital, Chestnut and Broom streets, Wilmington 14, Del. The constituting meeting has been called for Monday, June 9, at 9 a. m. at the Hotel Strand, Atlantic City, N. J.

Meeting of Chest Physicians.—The Maryland-District of Columbia chapter of the American College of Chest Physicians will meet April 21 preceding the semiannual meeting of the Medical and Chirurgical Faculty of the State of Maryland at the Belvedere Hotel, Baltimore. Subjects for discussion are "Sarcoidosis," "Congenital Atresia of the Esophagus," "Surgical Treatment of Pulmonic Stenosis," "Chemotherapy of Tuberculosis" and "Correlation of Various Branches of Medicine and Surgery as Related to Diseases of the Chest." Among the speakers are Drs. Cameron Haight, associate professor of surgery, University of Michigan Medical School, Ann Arbor, Mich., and John A. Kolmer, professor of medicine, Temple University School of Medicine, Philadelphia.

Special Society Elections.—The American Cancer Society elected Eric A. Johnston, president of the Motion Picture Producers and Distributors of America, Inc., chairman of its board of directors at its meeting March 7 in Chicago. Dr. Edwin P. Lehman, chief surgeon of the University of Virginia Hospital, Charlottesville, was elected president, succeeding Dr. Frank E. Adair, New York City. Elmer H. Bobst, Nutley, N. J., is serving as national chairman of the 1947 campaign opening April 1 to raise $12,000,000.——At the recent meeting of the American Academy of Pediatrics in Pittsburgh Dr. John A. Toomey, Cleveland, was named president-elect. Dr. Toomey is a professor of clinical pediatrics and contagious diseases, Western Reserve University School of Medicine, and physician in charge of the contagious division at City Hospital.

Medical Supplies for War Needy.—The Medical and Surgical Relief Committee of America is making an appeal for funds, drugs, medical instruments and medical and dental literature to be sent to needy and war devastated areas throughout the world. Since June 1940, when it was founded, the committee has shipped $1,220,916 worth of supplies to institutions. All donated supplies are rigidly checked by experts and reconditioned before shipment. Dr. Eugene H. Pool, New York, acting medical director, heads an advisory committee of physicians including Drs. George C. Andrews, Conrad Berens, Russell L. Cecil, Stuart L. Craig, Joseph Felsen, Franz M. Groedel, Ada Chree Reid, Lieut. Comdr. Carnes Weeks, Philip D. Wilson, all of New York; Rear Admiral Ross T. McIntire, Crenshaw D. Briggs and Daniel Blain, Washington, D. C.; Marjorie E. Reed, Plymouth, Pa., and Allen C. Whipple, Rochester, N. Y.

Postgraduate Medicine—A New Journal.—The Interstate Postgraduate Medical Association has begun the publication of a monthly periodical entitled *Postgraduate Medicine*. The first issue contains signed articles together with pictures of several of the authors, an editorial section, a section entitled This Month in Medicine, another entitled Men in Medicine, a consultation service, questions and answers, a correspondence column, Interstate Postgraduate Notes, pictures of historical epics in medicine and of the 1946 meeting of the association, and a section entitled What Other Editors Think. The editor in chief is Dr. Charles W. Mayo, Rochester, Minn., and the managing editor Dr. Arthur G. Sullivan, Madison, Wis. There are also a surgical, a medical and a specialty advisory board.

New England Diabetes Association.—The first meeting of the New England Diabetes Association will be held April 16 at 7:30 p. m. in the Dowling Amphitheater, City Hospital, Boston. The following clinical program will be presented: Drs. Frank N. Allan and Rosemary A. Murphy, Lahey Clinic, Boston, "Diabetes and Hyperthyroidism"; Francis C. Lowell, associate professor of medicine, Boston University School of Medicine, "Relation Between Insulin Sensitivity and Insulin Resistance"; William R. Ohler, assistant professor of medicine, Harvard Medical School, "Diabetic Coma at the Boston City Hospital," and Dr. Stanley L. R. Robbins, assistant pathologist, Mallory Institute of Pathology, Boston, "Renal Disease in Diabetes." A brief business meeting will follow. Physicians, surgeons, nurses, dietitians and other scientific workers interested in diabetes may apply for membership at the meeting or may write to the temporary secretary, Dr. James H. Townsend, 330 Mt. Auburn Street, Cambridge, Mass.

Decline in Mortality from Cancer Among Women.—The Statistical Bulletin of the Metropolitan Life Insurance Company reports a number of hopeful signs in the current cancer picture. Among white females insured in the industrial department of the Metropolitan, the age adjusted death rate from cancer in 1946 dropped to 78.9 per hundred thousand at ages 1 to 74 years, a new low. About ten years ago the rate was 90 per hundred thousand. Even among white male policyholders the mortality for cancer has shown a slight downward tendency. The gains in the control of cancer are likewise reflected, the bulletin states, in the trend of mortality at the various age periods. The largest improvement in the cancer death rate in the last decade among women was 14 per cent, registered among those between 25 and 34 years of age. The least improvement, 2.5 per cent, was recorded at ages 35 to 44. The cancer death rate among white men in the past decade has declined moderately at every age except 45 to 54, where there has been a slight increase. In a tabulation of the figures for this insurance experience, substantial declines are observed in the mortality from cancers of accessible sites between 1941-1945 and 1936-1940: for all such sites combined the decrease in death rate amounted to 15 per cent among white males and 9.8 per cent among white females. For such important sites among females as the breast and the uterus, the declines were 3.9 and 12.8 per cent respectively. Even most of the inaccessible cancers have tended to decline in mortality. Only cancers of the respiratory system and cancers classified in a residual group "others and unknown" have shown an important increase in their recorded death rate. These increases, it is said, are to some extent at least spurious and arise out of improved diagnosis and more accurate reporting. While the recent trend of cancer mortality has encouraging aspects, it would be to misread the facts to conclude that anything beyond the mere beginning has been made toward the control of cancer.

CORRECTIONS

J. W. Scott.—In the leading article in The Journal, March 15, page 735, the name of the third author should have been J. W. rather than G. W. Scott, M.D., Iowa City.

American Surgical Association.—In The Journal, February 1, page 310, in the "History of the American Medical Association" appears a statement to the effect that the American Surgical Association was organized in 1880 and that it was the first society devoted exclusively to specialists. This statement is incorrect since the American Dermatological Association was organized on Sept. 6, 1876 and the American Surgical Association was not organized until May 31, 1880.

Deaths

Donald Cameron Gordon, Scranton, Pa.; born in Ottawa, Ont., in 1895; McGill University Faculty of Medicine, Montreal, Que., Canada, 1922; specialist certified by the American Board of Radiology; member of the Radiological Society of North America and the American College of Radiology; immediate past president of the Lackawanna County Medical Society; served with the Canadian army in France during World War I; began active duty as a major in the medical corps, Army of the United States, in August 1942; served as chief of radiology at Camp Picket, Va., Woodrow Wilson Hospital, Staunton, Va., at a camp in South Carolina and at Fort Leonard Wood, Mo.; service terminated with the rank of lieutenant colonel Jan. 26, 1946; formerly on the staff of the Carbondale (Pa.) General Hospital; on the staffs of St. Mary's Mater Misericordia Hospital, West Side Hospital and the Moses Taylor Hospital; died January 9, aged 52, of cerebral hemorrhage.

Dyer Findley Talley ⊕ Birmingham, Ala.; born in Woodlawn, Ala., in 1865; Medical Department of Tulane University of Louisiana, New Orleans, 1892; member of the Southern Surgical Association and the Birmingham Surgical Society; fellow of the American College of Surgeons; formerly professor of surgery at the Graduate School of Medicine, University of Alabama; member of the founders group of the American Board of Surgery; past president Jefferson County Medical Society and the Medical Association of the State of Alabama; for many years served on the state board of censors and state board of medical examiners; founded the Talley Infirmary; consulting surgeon at the Hillman Hospital; one of the founders of the Norwood Hospital, where he served as attending surgeon and chief of the surgical staff and where he died January 8, aged 81, of pneumonia.

Charles Henry Starkel ⊕ Belleville, Ill.; born in Saint Libory, Ill., July 18, 1862; Rush Medical College, Chicago, 1884; at various times served the St. Clair County Medical Society as treasurer, corresponding secretary and vice president; fellow of the American College of Surgeons; formerly health commissioner of Belleville, member of the state board of health and the Illinois State Historical Society; for many years chief surgeon western division of the Southern Railway Company; past president of the Southern Railway Surgeons' Association; served as chief surgeon of the East St. Louis and Suburban Railway Company and chief surgeon of the Southern Coal, Coke and Mining Company; vice president and for many years member of the board of directors of the First National Bank; formerly affiliated with St. Vincent's Hospital; died February 22, aged 84, of cerebral hemorrhage.

John Harvey Law ⊕ Detroit; born in Detroit, April 19, 1909; University of Michigan Medical School, Ann Arbor, 1933; member of the Michigan State Hospital Association, serving as president in 1946; member of the American College of Hospital Administrators and the Detroit Rotary Club; deputy chief of the office of civilian defense for Detroit during World War II; a collaborating officer of the United States Public Health Service for the state of Michigan; first lieutenant, medical reserve corps, U. S. Army, not on active duty; in 1945 president of the Greater Detroit Hospital Council; at one time assistant physician at the Eloise (Mich.) Hospital for Mental Diseases; director and treasurer of the Grace Hospital, where he served an internship, residency and as assistant director and where he died January 9, aged 37, of carcinoma of the small intestine.

Charles Fairbank Painter, Boston; Harvard Medical School, Boston, 1895; member of the American Medical Association and the American Academy of Orthopedic Surgeons; past president of the American Orthopedic Association; fellow of the American College of Surgeons; formerly dean and professor of orthopedic surgery at the Tufts College Medical School; at one time on the faculty of his alma mater; served during World War I; on the consulting staffs of the Brockton (Mass.) General Hospital, Sturdy Memorial Hospital, Attleboro and Fairview Hospital, Great Barrington; formerly on the staffs of the House of Good Samaritan, Carney Hospital and the Robert Brigham Hospital; served as librarian of the Boston Medical Library; editor of the Yearbook of Orthopedic Surgery; died January 6, aged 77, of pulmonary edema.

John Marvin Ingersoll, Miami, Fla.; born in Youngstown, Ohio, March 11, 1869; Western Reserve University Medical Department, Cleveland, 1893; clinical professor emeritus of otolaryngology at his alma mater; member of the American Academy of Ophthalmology and Otolaryngology, American Laryngological Association, American Laryngological, Rhinological and Otological Society and the American Otological Society; fellow of the American College of Surgeons; specialist certified by the American Board of Otolaryngology; served during World War I; colonel, medical reserve corps, U. S. Army not on active duty; formerly on the staff of the Cleveland City and Lakeside hospitals in Cleveland; consultant, St. Francis Hospital in Miami Beach; died January 16, aged 77, of uremia.

Henry Parrott Dulaney, Los Angeles; born at Blount, Tenn., in 1877; Lincoln Memorial University Medical Department, Knoxville, Tenn., 1900; in 1910 appointed assistant surgeon at the National Military Home in Johnson City, Tenn.; subsequently served the homes at Danville, Ill., Dayton, Ohio, Marion, Ind., and again at Johnson City; in 1917 placed in charge of the Pacific branch of the National Military Home, now known as the Veterans Administration Center in West Los Angeles, where he has been stationed for many years and where he died January 25, aged 68, of coronary occlusion and diabetes mellitus.

Harry W. Allen ⊕ Minneapolis; University of Minnesota College of Medicine and Surgery, Minneapolis, 1900; on the staffs of the Maternity Hospital and St. Barnabas Hospital, where he died Dec. 28, 1946, aged 74, of coronary thrombosis.

M. H. Allen, Lafayette, Tenn.; University of Tennessee Medical Department, Nashville, 1893; at one time state senator; died January 9, aged 83, of cardiac asthma.

John Anderson Jr., New York; College of Physicians and Surgeons, Baltimore, 1913; affiliated with the University Heights Sanitarium and the Westchester Square Hospital; died in the Fordham Hospital January 19, aged 58, of hemoperitoneum, following an automobile accident.

Ross Epting Anderson, Jackson, Miss.; Tulane University of Louisiana School of Medicine, New Orleans, 1922; specialist certified by the American Board of Otolaryngology; member of the American Academy of Ophthalmology and Otolaryngology and the American Medical Association; served during World War I; on the staffs of the Jackson Infirmary and the Mississippi Baptist Hospital; died in St. Dominic's Hospital January 15, aged 48, of chronic myocarditis.

Charlotte E. Cooke Arnold, North Scituate, R. I.; College of Physicians and Surgeons, Boston, 1893; died recently, aged 86, of arteriosclerosis.

Oscar Frank Baerens, St. Louis; Beaumont Hospital Medical College, St. Louis, 1893; died in the Alexian Brothers Hospital Dec. 31, 1946, aged 76, of cerebral arteriosclerosis.

William Asa Baker, Anna, Ill.; Loyola University School of Medicine, Chicago, 1918; member of the American Medical Association; physician for Community High School Athletics Association and associated with the Chicago and Northwestern Railroad; on the staff of the Anna State Hospital, where he died January 18, aged 57, of cerebral hemorrhage.

Sylvester L. Ballard, Grayling, Mich.; Michigan College of Medicine and Surgery, Detroit, 1905; member of the American Medical Association; served during World War I; at one time commissioner of Bay City; died in the General Hospital, Bay City, January 8, aged 65, of cerebral hemorrhage.

Henry Valentine Bancroft, Blue Mounds, Wis.; Rush Medical College, Chicago, 1885; also a druggist; served as postmaster and village health officer; member of the village board; died January 17, aged 86, of chronic nephritis and coronary occlusion.

Chester LeRoy Barry, Oxford, Pa.; University of Pennsylvania Department of Medicine, Philadelphia, 1899; for many years physician to the Maryland division of the Pennsylvania Railroad; served as a member of the board of health and public school board and overseas during World War I; died January 22, aged 72, of hypertension.

Joseph E. Bogar, Rahway, N. J.; College of Physicians and Surgeons, Baltimore, 1892; served for many years as a trustee of the Pennsylvania House of Correction for Women; formerly president of the board of education in Millersburg, Pa.; served as physician and surgeon for the Pennsylvania Railroad; died January 21, aged 75, of cerebral hemorrhage.

Henry Harold Brown, Collegeville, Pa.; University of Pennsylvania Department of Medicine, Philadelphia, 1896; veteran of the Spanish-American War; died January 18, aged 74, of heart disease.

Mark Atkins Brown ⊕ Cincinnati; Miami Medical College, Cincinnati, 1894; since 1942 professor emeritus of medicine at the University of Cincinnati College of Medicine; fellow of the American College of Physicians; past president of the Cincinnati Academy of Medicine; formerly health officer of Cincinnati; for many years affiliated with the Cincinnati General Hospital; died in the Christian R. Holmes Hospital January 13, aged 72, of cerebral hemorrhage.

William Ridgeway Card, Memphis, Tenn.; Louisville (Ky.) Medical College, 1903; served on the staff of the Tennessee Home and Training School for Feebleminded Persons, Donelson; died in the Baptist Memorial Hospital Dec. 27, 1946, aged 72, of carcinoma of the stomach.

George Lafayette Chamberlain, Eldridge, Calif.; Rush Medical College, Chicago, 1891; served during World War I; affiliated with the Sonoma State Home; at one time medical superintendent of the Home for the Feebleminded and Epileptic, Lapeer, Mich.; died in November 1946, aged 77.

Daniel Robert Chase ⊕ Major, U. S. Army, retired, Orlando, Fla.; Dartmouth Medical School, Hanover, N. H., 1905; served during World War I; entered the medical corps of the U. S. Army as a major on July 1, 1920; retired Aug. 31, 1932 for disability in line of duty; died May 15, 1946, aged 67.

Edith M. Clime-Weber ⊕ Philadelphia; Woman's Medical College of Pennsylvania, Philadelphia, 1903; died Dec. 23, 1946, aged 67, of coronary occlusion.

William Harrison Clouse, Canton, Ohio; Bellevue Hospital Medical College, New York, 1885; died in the Aultman Hospital Dec. 28, 1946, aged 90, of cerebral hemorrhage.

Benjamin Miles Deardorff, Clatonia, Neb.; Jefferson Medical College of Philadelphia, 1896; died in Lincoln January 13, aged 74, of uremia.

James Washington Dunn ⊕ Cairo, Ill.; Vanderbilt University School of Medicine, Nashville, Tenn., 1892; past president of the Alexander County Medical Society; expert examiner to the Pension Bureau since 1900 and member of the medical advisory board during World War II; on the staff of St. Mary Infirmary, where he died January 10, aged 84, of cerebral hemorrhage.

Ralph Stephen Fisher ⊕ Portland, Ore.; Rush Medical College, Chicago, 1910; served during World War I; on the staff of St. Vincent's Hospital; died Dec. 21, 1946, aged 67, of coronary disease.

Camille Joseph Flotte ⊕ Passed Assistant Surgeon Lieutenant, U. S. Navy, Norristown, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1919; entered the U. S. Navy on April 14, 1921; retired Jan. 1, 1931 for incapacity resulting from an incident of the service; died January 5, aged 51, of cerebral hemorrhage.

James LeRoy Foster, Pittsburgh; University of Pittsburgh School of Medicine, 1913; member of the American Medical Association; specialist certified by the American Board of Pediatrics; on the faculty at his alma mater; on the staffs of the Children's and St. Margaret Memorial hospitals; medical director of the Juvenile Court; died January 16, aged 58, of coronary occlusion.

Marc A. Fournier, Sault Ste. Marie, Mich.; Michigan College of Medicine and Surgery, Detroit, 1891; died January 15, aged 77, of carcinoma of the stomach.

James Thomas Fowler, Birmingham, Ala.; Medical College of the State of South Carolina, Charleston, 1883; member of the American Medical Association; at one time associated with the Jefferson Manly Falkner Soldiers Home of Alabama in Mountain Creek; died January 8, aged 83, of cardiorenal disease.

Thomas Edward Galvin, Boston; College of Physicians and Surgeons, Boston, 1908; died January 18, aged 73, of cerebral hemorrhage.

Carroll Hunter Gerry ⊕ Shrewsbury, Pa.; University of Pennsylvania Department of Medicine, Philadelphia, 1901; died Dec. 24, 1946, aged 70, of *myocarditis and arteriosclerosis.*

Calogero Giovinco ⊕ Brooklyn; Long Island College Hospital, Brooklyn, 1900; an Affiliate Fellow of the American Medical Association; on the staff of the Bushwick Hospital; died January 1, aged 77, of cerebral hemorrhage.

Justin Frank Grant ⊕ Boston; Johns Hopkins University School of Medicine, Baltimore, 1903; formerly professor of anatomic embryology and histology at the Atlanta College of Physicians and Surgeons and professor of anatomy and pathology at the West Virginia University School of Medicine, Morgantown; died in Manchester, N. H., January 26, aged 69, of heart disease.

James Alexander Grizzard ⊕ Drewryville, Va.; Baltimore Medical College, 1906; president of the Southampton County Bank; died in the Raiford Memorial Hospital, Franklin, January 28, aged 65, of lymphatic leukemia.

Mercer Freeman Hall, Neligh, Neb.; Ensworth Medical College, St. Joseph, Mo., 1901; died in Cedar Rapids Dec. 14, 1946, aged 75, of chronic myocarditis.

Howard Eugene Hamilton ⊕ Cleveland; University of Kansas School of Medicine, Kansas City, 1934; served a residency and internship at the City Hospital; served a residency at the University Hospitals; specialist certified by the American Board of Otolaryngology; clinical instructor in otolaryngology at the Western Reserve University School of Medicine; died Dec. 27, 1946, aged 35, of cerebral embolus and rheumatic heart disease.

Vallandingham Hawkins, Fawn Grove, Pa.; Baltimore Medical College, 1894; member of the American Medical Association; died Dec. 13, 1946, aged 82, of carcinoma.

James Wallace Hill, Lebanon Junction, Ky.; University of Louisville Medical Department, 1909; died in the King's Daughters' Hospital in Frankfort, January 27, aged 70, of arteriosclerotic heart disease and multiple myeloma.

Perez Briggs Howard ⊕ Newtonville, Mass.; Harvard Medical School, Boston, 1902; served during World War I; died January 18, aged 70, of coronary thrombosis.

Trent Orin Huff, Clinton, Tenn.; University of Tennessee College of Medicine, Memphis, 1934; member of the American Medical Association; formerly prison physician at Petros; died in Macon, Ga., January 6, aged 45, of cerebral hemorrhage.

Samuel Henry James ⊕ San Fernando, Calif.; Chattanooga (Tenn.) Medical College, 1906; member of the Medical Association of the State of Alabama; served during World War I; member of the American College of Chest Physicians; formerly associated with the U. S. Public Health Service Reserve; for many years affiliated with the Veterans Administration Hospital at San Fernando; died Dec. 15, 1946, aged 66, of cerebral hemorrhage.

William Daniel James ⊕ Hamlet, N. C.; Jefferson Medical College of Philadelphia, 1908; member of the House of Delegates of the American Medical Association, 1926-1927; formerly secretary-treasurer of the North Carolina State Board of Medical Examiners; past president of the Richmond County Medical Society; chief surgeon for the Seaboard Air Line Railroad; founder and chief surgeon of the Hamlet Hospital; died January 15, aged 61, of coronary thrombosis.

Kyle McCue Jarrell ⊕ Beckley, W. Va.; University of Maryland School of Medicine, Baltimore, 1906; served as president and secretary of the Raleigh County Medical Society; served one term as deputy sheriff of Raleigh County; vice president of the Beckley National Bank; for many years superintendent of the Pinecrest Sanitarium; died January 24, aged 65, of cerebral hemorrhage.

Charles Kneller Koones ⊕ Washington, D.C.; Columbian University Medical Department, Washington, 1887; died January 14, aged 80, of coronary heart disease.

Charles A. Gottlieb Langner Jr., Brownsville, Texas; Johns Hopkins University School of Medicine, Baltimore, 1928; served during World War II; killed January 12, aged 46, in a plane crash.

Joseph Antonio La Palme, Webster, Mass.; Tufts College Medical School, Boston, 1925; member of the American Medical Association and the Connecticut State Medical Society; fellow of the American College of Surgeons; interned at St. Vincent Hospital in Worcester; a lieutenant commander in the medical corps of the U. S. Naval Reserve during World War II; served on the staff of the Day Kimball Hospital in Putnam, Conn.; died January 21, aged 46, of coronary thrombosis.

Charles Francis Lawler, Detroit; Milwaukee Medical College, 1907; member of the American Medical Association; served on the staffs of the Pontiac (Mich.) General Hospital and St. Joseph's Mercy Hospital; died January 13, aged 70, of cerebral hemorrhage.

Fred Allard Lemar ⊕ Columbus, Neb.; University of Nebraska College of Medicine, Omaha, 1902; served during World War I; on the staff of St. Mary's Hospital, where he died January 2, aged 72, of heart disease.

Louis Levin ⊕ Trenton, N. J.; Jefferson Medical College of Philadelphia, 1919; served as cardiologist to St. Francis Hospital, State Hospital and State Prison; author of "Living Along with Heart Disease" ; died January 1, aged 49, of cerebral thrombosis.

Walter C. Lovejoy ⊕ Maywood, Ill.; Chicago Homeopathic Medical College, 1891; fellow of the American College of Surgeons; past president of the Aux Plaines Branch of the Chicago Medical Society; charter member and past president of the Maywood Rotary Club; veteran of the Spanish-American War; affiliated with the Westlake Hospital, Melrose Park, where he died January 15, aged 79. of coronary occlusion.

Thomas C. McGonagle, Chicago; Northwestern University Medical School, Chicago, 1898; member of the American Medical Association; at one time on the faculty of his alma mater; on the staff of the Evangelical Hospital; died January 31, aged 79, of seminoma of the testes.

Charles MacGregor ⊕ Dayton, Ohio; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1889; College of Physicians and Surgeons, medical department of Columbia College, New York, 1890; died January 21, aged 78, of cerebral hemorrhage.

Francis Aloysius McMullin, Philadelphia; Jefferson Medical College of Philadelphia, 1901; died January 28, aged 67, of bronchopneumonia.

Irving Oliver Mahr, Boyertown, Pa.; Temple University School of Medicine, Philadelphia, 1912; served overseas during World War I; died in St. Joseph's Hospital, Reading, January 11, aged 56, of coronary embolism.

Philip Manjoney, Central Islip, N. Y.; Columbia University College of Physicians and Surgeons, New York, 1916; served a residency at the Central Islip State Hospital, where he died January 3, aged 57, of adenocarcinoma of the cecum.

Howard Longstreet Maps ⊕ Budd Lake, N. J.; New York Homeopathic Medical College and Flower Hospital, New York, 1909; at one time practiced in Passaic, N. J., where he was affiliated with St. Mary's Hospital, serving for many years as president of the staff, and Passaic General Hospital; died in the Morristown (N. J.) Memorial Hospital January 18, aged 61, of coronary thrombosis and cerebral embolus.

Raymond Victor May, Cleveland; University of Wooster Medical Department, Cleveland, 1913; specialist certified by the American Board [illegible] r of the American Medical Association, the [illegible] of North America, Inc., the Academy of [illegible] and the American College of Radiology; for many years on the staff of St. Luke's Hospital; died Dec. 27, 1946, aged 56, of cancer of the pharynx and diabetes mellitus.

John Artemas Mead ⊕ Hattiesburg, Miss.; Mississippi Medical College, Meridian, 1912; Vanderbilt University School of Medicine, Nashville, Tenn., 1914; formerly practiced in Logtown, where he served as health officer of Hancock County; member of the medical reserve corps during World War I; during World War II examining physician for Selective Service, Forrest County; awarded a presidential citation; died February 10, aged 62, of coronary thrombosis.

Robison E. Michener, Mulvane, Kan.; Eclectic Medical Institute, Cincinnati, 1899; served as a member of the city council and the school board; died in the Wichita (Kan.) Hospital January 10, aged 85, of bronchopneumonia.

Charles Donley Miller ⊕ Syracuse, N. Y.; Hahnemann Medical College and Hospital, Philadelphia, 1921; served during World War I; medical director of the Unity Life Insurance Company; died January 8, aged 51, of hypertensive heart disease.

Wilfred Porter Miller, Syracuse, N. Y.; University of Maryland School of Medicine, Baltimore, 1917; member of the American Medical Association; served on the staffs of the Syracuse General and St. Joseph's hospitals; died January 16, aged 61, of coronary disease.

Samuel Cargill Milligan, Pittsburgh; Western Pennsylvania Medical College, Pittsburgh, 1891; member of the American Medical Association; veteran of the Spanish-American War; on the staff of the South Side Hospital; died January 4, aged 85, of cerebral hemorrhage.

William Elias Mills, Sumter, S. C.; Medical College of the State of South Carolina, Charleston, 1901; honorary member of the South Carolina Medical Association; member of the American Medical Association; on the staff of the Toumey Hospital, where he died January 6, aged 70, of coronary thrombosis.

Byron Fay Mock, San Diego, Calif.; University of Pennsylvania School of Medicine, Philadelphia, 1925; member of the American Medical Association; died January 3, aged 47, of coronary artery disease.

Benjamin Henry Morris, Tucson, Ariz.; Cornell University Medical College, New York, 1943; interned at the Bellevue Hospital in New York, where he served a residency at the Doctors Hospital; diplomate of the National Board of Medical Examiners; died January 9, aged 31, of coronary thrombosis.

Guy Guerdon Newton, Evergreen, Ala.; Medical College of Alabama, Mobile, 1897; member of the American Medical Association; died January 15, aged 73, of influenza and bradycardia.

Frank Nisbett, Brookland, Ark.; Memphis (Tenn.) Hospital Medical College, 1905; member of the American Medical Association; died in Jonesboro January 11, aged 74, of myocarditis and nephritis.

Eugene E. Northcutt ⊕ Newport, Tenn.; Vanderbilt University School of Medicine, Nashville, 1904; medical superintendent of the Dr. E. E. Northcutt Private Clinic and Infirmary; died in St. Mary's Hospital, Knoxville, Dec. 23, 1946, aged 66, of carcinoma.

Charles O'Leary, Providence, R. I.; Long Island College Hospital, Brooklyn, 1893; died January 3, aged 77, of chronic nephritis.

Lewis N. Osborne, Atlanta, Ga.; University of Georgia Medical Department, Augusta, 1898; died January 15, aged 77, of cerebral vascular disease.

Ray Charles Otte ⊕ Wellsburg, W. Va.; Western Reserve University School of Medicine, Cleveland, 1929; on the staff of the Ohio Valley General Hospital, Wheeling, where he died recently, aged 42, of carcinoma.

Guy Mannering Owsley, Thorntown, Ind.; University of Louisville (Ky.) Medical Department, 1905; formerly a member of the school and library boards; died January 18, aged 64, of carcinoma.

Charles Pius ⊕ Yreka, Calif.; Cooper Medical College, San Francisco, 1906; served during World War I; served as city health officer and as superintendent of the Siskiyou County General Hospital; died January 9, aged 65, of coronary occlusion.

William Edward Quicksall ⊕ St. Petersburg, Fla.; University of Pennsylvania Department of Medicine, Philadelphia, 1898; at one time on the faculty of his alma mater and on the staff of St. Joseph's Hospital in Philadelphia; on the staff of the Mound Park Hospital, where he died January 13, aged 70, of cerebral hemorrhage.

Richard Gilchrist Smith ⊕ Denver; University of Colorado School of Medicine, Denver, 1912; assistant professor of surgery (urology) at his alma mater; member of the American Urological Association; specialist certified by the American Board of Urology; affiliated with the Colorado General Hospital, Swedish National Sanatorium and Denver General Hospital, where he formerly was president of the staff, and the Mercy Hospital, where he died Dec. 9, 1946, aged 65, of coronary artery disease.

Richard Manges Smith ⊕ Philadelphia; Jefferson Medical College of Philadelphia, 1927; specialist certified by the American Board [illegible] of the American Roentgen Ray Society [illegible] of North America and the American [illegible] demonstrator of radiology at his alma [illegible], 1946, aged 45, of multiple sclerosis.

Sam Sparhawk, Ypsilanti, Mich.; University of Vermont College of Medicine, Burlington, 1926; member of the American Medical Association and the Vermont State Medical Society; served during World wars I and II; in 1946 placed in charge of the Lewis-Pacific Counties Department of Health in Washington; died in the University Hospital, Ann Arbor, January 22, aged 47, of acute peritonitis.

Dillon J. Spotswood, Mobile, Ala.; Medical College of Alabama, Mobile, 1890; died Dec. 1946, aged 82, of accidental suffocation.

H. A. Stuart, Olive Branch, Miss.; Louisville (Ky.) Medical College, 1894; died Dec. 23, 1946, aged 78, of cerebral hemorrhage.

Claude W. Trapp, Lexington, Ky.; University of Louisville (Ky.) Medical Department, 1889; member of the American Medical Association; died in St. Joseph's Hospital January 18, aged 79, of gangrene of the left leg.

Henry Benjamin Watson, Miami Beach, Fla.; University of the City of New York Medical Department, New York, 1888; for many years affiliated with the Metropolitan Life Insurance Company in New York; died Dec. 19, 1946, aged 82, of carcinoma of the prostate.

Jacob Allen Wells ⊕ Paintsville, Ky.; University of Louisville School of Medicine, 1911; served as president of the Johnson County Medical Association; died in St. Mary's Hospital, Huntington, W. Va., February 22, aged 66, of coronary occlusion.

John G. Wilkinson, Birmingham, Ala.; University of Tennessee Medical Department, Nashville, 1902; member of the American Medical Association; died January 8, aged 79, of pulmonary embolism.

David Zuckerman ⊕ Brooklyn; University and Bellevue Hospital Medical College, New York, 1910; founder, member of the board of directors and chief proctologist at the Crown Heights Hospital; died January 24, aged 60, of coronary thrombosis.

Foreign Letters

LONDON

(From Our Regular Correspondent)

March 1, 1947.

More Education for Nurses

The council of the Royal College of Nursing has decided to set up a separate educational establishment. If possible there will be a school within the University of London, and the opportunity will be examined of providing nursing education at both postgraduate and undergraduate levels in addition to diploma courses. University schools of the type envisaged already exist in the United States, Canada and India. In an editorial the *Nursing Times* states that if the universities and nursing profession in this country do not follow that lead British nurses will be unable to compete for the higher nursing posts in the Dominions, colonies and other countries, as they will have no experience of the advanced nursing education at the university level that the rest of the world is beginning to demand.

It is not claimed that a university degree is needed by all nurses. Much simple nursing care can be carried out efficiently and intelligently by any woman of average ability who wants to look after the sick. But the constant advances of medicine and surgery have thrown increasingly technical work on nurses. The British universities have not opened their doors as readily to the technical professions as those of the United States and are stricter in their demands for educational standards of entrants. The Royal College of Nursing does not ask for the lowering of these standards nor does it wish to decrease the prestige of the degree conferred. But, it asks for broadening of the educational facilities within the University of London to secure the position of the British nurse throughout the world.

Rehabilitation Following Chest Surgery

At the Section of Physical Medicine of the Royal Society of Medicine Mr. Holmes Sellor discussed the special subject of rehabilitation following chest surgery, which he said was better in chest than in general surgery, if only because the treatment of chest cases was carried out in institutions where the general tempo of life was more like that of a sanatorium than of a busy city hospital. In chest work the aim was to keep the patient in the hospital until he was ready to return practically to a normal life. Some stayed only four or five weeks in the hospital, but the difficult ones were those with chronic empyema and those with complications, who might have to remain for periods up to a year. Diet had to be considered, as in suppurations the loss of protein might be considerable. The most difficult problem was the psychologic one of the patient in the hospital, for as he improved he became restless and later apathetic. The best example of the long term case was chronic empyema, in which a mass of fibrin was deposited over the pleural surfaces surrounded by an unyielding contracted chest wall. Secondary scoliosis was an appalling deformity often the result of maltreatment in the acute stage.

Chest Exercises

The object was to get the chest wall moving and to prevent any structural deformity from developing. The type of breathing exercise was thus based on inspiration. These inspiratory exercises were new, but physical therapists, who had developed them, had shown their inestimable value. The first secret was the teaching of concentration. Breathing exercises for ten minutes each morning were useless. The patient should be told that of the twenty-four hours eight were sufficient for sleep, eight were enough for meals and play, and the remainder should be given to sedulous training in breathing. He should be taught localized inspiratory exercises, working against some form of resistance, concentrating his mind and activity on the area of chest that it was desirable to move. In empyema it was the basal expansion which was important to regain. By careful concentration it was possible to move one area and only one by voluntary efforts. Other movements were lateral movements, an attempt to get posterior expansion and finally a ripple almost along the anteroposterior line.

After general exercises it was important to see that the stance of the patient and his position in bed were correctly maintained. There was a tendency to avoid discomfort in bed by cramping-in on the bad side of the chest, which actually tended to increase the defects which it was sought to remedy. In the absence of contraindications the patient should be got out of bed, as effective coughing for clearance of secretions was most desirable. For occupational therapy leather work and toy making had proved their value.

A Biography of Sir Jonathan Hutchinson

Though Sir Jonathan Hutchinson, noted as a clinician, died in 1913, his biography, written by his nephew, has only just appeared. On his death many important obituary notices from eminent friends in different branches of the profession (so widely was his work revered), from the ophthalmologist Nettleship, from the surgeon Sir Rickman Godlee and from the physician Sir Thomas Barlow, none dealt adequately with his private life or his general, as apart from his medical, teaching. None of the writers had access to the mass of private letters, particularly those to his wife, which reveal his deepest thoughts. Not being medical, the author asks the profession not to expect medical knowledge on his part. However, he has made good use of the pronouncements from leading men, both at home and abroad, on Hutchinson's work. A surgeon, Mr. J. Johnston Abraham, contributes an interesting foreword telling of his first contact with Hutchinson at the Polyclinic, which he founded for postgraduate teaching after retiring from the active staff of the London Hospital: "A tall bent old man with a great dome of a head, dark eyes looking benevolently through steel rimmed spectacles. Round him he had grouped rows and rows of colored pathologic drawings, mostly of rare skin diseases. He spoke rather slowly and solemnly, and what he said was clear and logical. There was nothing scintillating about it, but you felt he was speaking out of an immense knowledge. Occasionally he illustrated his point by some unexpected simile."

A Clinician with Breadth of View

Mr. Hutchinson begins with the family history and pedigree of his uncle. The family had been Quakers since the origin of that sect, and one of them suffered imprisonment for his faith. With such an upbringing Sir Jonathan Hutchinson remained a deeply religious man. But his knowledge of science, and particularly the doctrine of evolution as expounded by Darwin, modified his views. He accepted evolution with enthusiasm, as it enlarged his hopes for the future of humanity. "The attempt to realize heavenly life on earth" became his religion. The author asks his readers to accept this book "as embodying a very definite message for our generation. Not a theory merely but a life, inspired by a conscious purpose." To the medical readers the book will have a special appeal as a complete revelation of the deepest thoughts and private life of the greatest clinician of his age, a specialist in many fields who, in contrast to the narrowness of outlook associated with that class, always had a breadth of view which can only be described as philosophical. He saw the normal and the abnormal, the common and the rare, science and religion, as one entity.

ITALY

(From Our Regular Correspondent)

NAPLES, March 10, 1947.

Ruptured Intervertebral Disk Simulating Angina Pectoris

The work of Josey and Murphey recorded in THE JOURNAL, June 15, 1946, has had a noteworthy reception in Italy and also in France. The *Presse médicale* of February 5, page 91, points out that it is a work which should attract the attention of the medical profession. Two typical instances occurred in employees of a large Italian street car company. Following a vertebral traumatism sustained in the collision of two vehicles the angina syndrome was apparent from reactions to the more physical effect of walking, though electrocardiographic examination proved negative. A myelogram afterward showed a protrusion of the herniated nucleus pulposus in one of the cervical vertebrae. A radiologist, a surgeon and a pathologist have recently written on the pathology of the annulus fibrosus and the protrusion of the herniated nucleus pulposus, a topic which has been followed in Italy with great interest. The work is presented by a noted neurologist and is compiled by Drs. Imperati, Muscettola and Rubino. Eight cases of hernia of the disk with symptoms varying from lumbago to sciatica are reviewed, all caused by accidents involving injury though the patients were unaware of them at the time or had forgotten them. These cases have been verified by radiography, with the myelogram. The authors have employed surgical therapy but state that they do not share the enthusiasm shown in other countries for this kind of treatment. According to them the "primum movens" more than the injury which causes the hernia of the intervertebral disk is constitutional and depends on the arthritic disposition of the patient. Therefore before resorting to surgical operation they tried a general disintoxicating therapy and hygienic thermal bath treatment. Led to believe that no better means could be applied, they followed the surgical course of treatment only in severe cases as the results were discouraging.

Nobel Prize Winner Chain in Italy

Dr. E. B. Chain, chemist and Nobel Prize winner, and member of the famous team which worked on the discovery of penicillin, has arrived in Italy at the invitation of the Antibiotic Study Center to lecture in Naples, Rome, Florence and Venice. A few months ago Professor Fleming, the honorary president of the Italian Antibiotic Study Center, came to Milan and lectured on the same subject. Dr. Chain, who was received by the chancellor of the University of Naples and all the representations of the Faculty of Medicine, commenced his tour by giving a lecture in the Great Hall of the university. A large number of doctors, physicians and chemists attended. Chain recounted the story of the discovery of penicillin and then went on to discuss the chemical constitution of the molecule of penicillin. He discoursed on a few of the difficulties now being encountered in the attempts being made to produce penicillin synthetically. He clearly pointed out the general differences in antibacterial properties between penicillin and sulfonamides, though he did not hide the fact that the "antibiotic action" remains obscure in many ways. He discussed the case of initial inadequate doses of penicillin during treatment; save for certain bacterial bodies, the drug—notwithstanding bacterial resistance—could become again effective by increasing the doses. Chain however was rather skeptical on the possibilities attached to synthetic penicillin. He widely praised the admirable progress made in the production of the natural product, and particularly with regard to the American industry. He seems to be of the opinion that the supply of natural penicillin will eventually be sufficiently great for world needs and much more economical than the future synthetic product, owing to difficulties of preparation. In an interview Dr. Chain was asked about the different groups of penicillin, viz. F, G, X and K, which he referred to in English terminology as 1, 2, 3 and 4. He stated that K penicillin is easily destroyed by serum of the circulating blood and that it is for this reason that though active in vitro it is less valuable than, for example, penicillin G, the composition of which makes it a more perfect preparation and depends on the chemical constitution of the medium in which it is grown. Chain appeared a genial and great scientist. He insisted, with great affability of manner, that the Italian Bartolomeo Gosio should rather be remembered as a pioneer of the antibiotic drugs. Gosio in 1893 had already isolated Penicillium glaucum in crystalline form—the more common form of mold derived from maize. This discovery, according to Chain, was the first memorable date in the story of penicillin.

SWEDEN

(From Our Regular Correspondent)

STOCKHOLM, March 11, 1947.

Nurses Request Higher Pay

The public is taking great interest in the present fight of nurses versus the government, brought about by the refusal of the government to increase the nurses' pay. An unusually large audience attended the recent meeting of the Swedish Nurses' Association at one of the bigger auditoriums in Stockholm. Every seat was taken, and many people had to be turned away, for the "opinion" meeting promised to be lively. The nurses rose up in holy wrath and had their say on many abuses within the profession, particularly the long hours and underpay. Instead of going on strike, of which there had been rumors, the nurses of the three state hospitals in Stockholm announced that they would resign in a body but stay on the jobs as their own substitutes at a better and fairer rate of pay than they were now receiving as regular employees. The speakers directed strong criticism against the government and demanded better working conditions and no more working on an assembly line basis. One nurse told the audience of the situation at the Serafimer Hospital where 80 male and 300 female patients were waiting to be admitted to the neurosurgical clinic. Owing to the shortage of nurses one entire section has had to be closed, and the waiting period for some patients is as long as two years. The situation in the city of Stockholm hospitals is somewhat better than in the federal, although there also the shortage is strongly felt, and it is almost impossible for them to get nurses aides or student nurses. One hospital has taken to offering cleaning jobs to patients who have recovered and thereby gained some extra working help. The fight is still going on with the public in sympathy with the nurses.

Nordic Surgical Congress in June

The Nordic Association of Surgeons plans to hold its congress in Stockholm from June 26 to 28 and in conjunction therewith celebrate the fiftieth year of its existence. This should actually have taken place in 1943 but had to be postponed because of the war. The Nordic Orthopedic Association will simultaneously hold its first meeting since the war. It is estimated that about 300 surgeons and orthopedists will attend, 100 from Sweden and the remainder from the other Scandinavian countries.

Swedes Help Fight Venereal Disease in Poland

Venereal disease has been on the increase in Poland ever since the war, especially in Masuria, where almost entire villages are contaminated. To help fight this alarming situation a "venereal ambulance" was outfitted by the Swedish Red Cross with the help of a grant of 100,000 kronor from the Help to Europe fund. This ambulance left Sweden recently to spend first three months in Masuria and then travel farther through Poland. A Polish physician, Dr. Josefina Pietrowska, a Swedish nurse and assistant, two Swedish chauffeurs and a jeep made up the party. This big white polyclinic on wheels is the first of its kind in Sweden. It is a 90 horse power Volvo military bus converted into a waiting room, a treatment room and a sterilizing room. All the equipment is said to be of the finest quality. It is expected that about 100 patients a day will be given prophylactic treatment in Poland. The more severe cases will of course have to be sent to stationary hospitals.

AUSTRALIA

(From Our Regular Correspondent)

March 1, 1947.

Three Babies Die of Tetanus from Infected Talc

Details of the investigation of the fatal illness of 3 babies in Auckland, New Zealand, within a fortnight, have been reported by the New Zealand Department of Health. The investigation began after the death of the first two babies, who were about a fortnight old. The umbilical stump was septic in both cases. One child had been circumcised, but the surgical wound was clean. It appeared that all dressings had been autoclaved, and the only common factor in the nursing of the two babies was the talc used in their toilet. This proved to be made from talc imported from India in unlined jute sacks. The process of manufacture consisted in mixing with perfume and a small portion of boric acid. The third case occurred a week later, and in this, one of the same brands of powder had been used In spite of the prompt administration of antitetanic serum and penicillin, all 3 babies died. In their case history, particular mention was made of the high degree of muscular spasm in each child and also the hyperpyrexia. The presence of tetanus spores in the infected talc was proved. This form of the silicates of magnesium is found in natural deposits which are quarried or mined, and it is not surprising that contamination with tetanus should occur. Samples of French chalk arriving in New Zealand in previous years have been found to be infected with the spores of Clostridium tetani. The sites where these forms of magnesium silicate are obtained have been used over a very long period and are possible sources of contamination by animal feces. Cultivation of the specimens of talc by the method of Fildes was successful in isolating the organism. The appearance of spores in a culture is not always certain, as it depends on several factors, including the selection of culture medium. A culture may consist of filamentous forms and yet produce a subculture of sporing forms. The organisms isolated from the talc were proved to be virulent for animals. Swabbings from the umbilicus were also examined from each baby, but isolation cultures were not successful. As soon as the disease was recognized, prompt action was taken to withdraw the suspected powder from the market, and precautions for sterilization of talc were instituted. In future, all talc will be sterilized before retail marketing.

Proposed National Pharmaceutical Benefits Scheme

The commonwealth government is considering plans for the introduction of a national pharmaceutical benefits scheme. This is popularly known as "free medicine." Pharmacists are willing to cooperate, provided certain principles affecting their rights are not interfered with. Agreement had practically been reached last year on terms of service, but negotiations were suspended because of the potential threat in certain clauses of the bill which enabled "Friendly Societies" dispensaries to conduct pharmacies and trade generally with the public. Conditions have changed since last these matters were discussed between government representatives and pharmaceutical leaders. The commonwealth now has extra powers, conferred by the recent referendum, and is in a strong position for negotiation. The pharmacists do not wish blindly to obstruct the government's scheme solely because it is a national scheme. Their promise of cooperation was withdrawn because of spontaneous resistance to an action which strikes at one of the fundamentals of pharmaceutical practice—the preservation of their personal and individual rights with regard to the practice of their profession. Pharmacists see a danger that the individual pharmacist will be crushed by group interests—a real menace as one can see from the examples in recent history of the crushing of the small man by cooperative societies, chains and other monopolist trading associations. The pharmacists will resist strongly such encroachment on their rights of private practice. A splendid private service has been given in Australia, and there is no doubt that an equally good national service can be provided by retail pharmacists in cooperation with the commonwealth. Action by the government which would result in the elimination of independent practice by professional men and small traders would be in direct negation of the Labor government's policy, so it is unlikely that the government will force an issue that could not fail to lead in that direction. The minister of health recently met the federal executive of the Pharmacist's Guild to reopen discussions on the Pharmaceutical Benefits Act. These will have an important bearing on the future of pharmacy in this country.

Investigation of Health Services in South Australia

A committee was appointed by the Parliament of South Australia to inquire into and report on the advisability of consolidating the health services of the state into a single department under the minister of health. Four of the seven members of the committee were doctors. Its report was submitted to Parliament on Dec. 4, 1946. The committee found that, in general, the existing organization is a patchwork lacking consolidated statutory control. There is no proof that the work is coordinated into a competent medical service. The functions of the different bodies overlap, and there is lack of liaison between them.

The investigation revealed that the public health machinery of South Australia is still based on the health act of 1898. The health services of the state are divided into two main groups, both under the control of the minister of health. Health services are administered by a central board of health and medical services by the director general of medical services through the channels of the Hospitals Department. The only liaison between the two is an Advisory Committee on Health and Medical Services appointed by the government in 1943. This committee advises the minister of health on health services. There are, however, certain health services not under the control of the minister. It is the responsibility of the Central Board of Health to administer acts of Parliament relating to the various health activities in conjunction when necessary with the Metropolitan County Board and the various local boards of health, of which there are in the state no fewer than 142. The Hospitals Department is controlled by the director general of medical services, who is responsible to the minister of health for the control and administration of hospitals and institutions, which may be classified as government general hospitals, tuberculosis hospitals and mental hospitals.

The Parliamentary Committee recommended that a Department of Health and Medical Services should be established under the control of the minister of health and that a commission to be known as the Commission of Health and Medical Services should also be appointed to control and administer the department and be responsible to the minister, the commission to consist of five members, of whom the chairman would be director general of health and medical services. He should be a medical practitioner and a permanent full time officer of the public service. Two of the remaining members should also be medical practitioners. These proposals are in accordance with the principles held by the South Australian Branch of the British Medical Association. It seems that the government of South Australia is in earnest about the state of its health services and that it will plan wisely for the future. Much will depend, particularly in the initial stages, on the man who is chosen as medical head of the proposed commission.

Correspondence

OBESITY

To the Editor:—Dr. S. Charles Freed, in his article on "Psychic Factors in the Development and Treatment of Obesity" (The Journal, February 8, p. 369) has emphasized the important psychologic aspects which have often been overlooked. The problem of obesity cannot simply be approached in mechanistic terms of "glandular balance." Dr. Freed has enumerated many more dynamic factors which are essential for a thorough evaluation of the complexity of etiologic factors of obesity. There is, however, also a great danger associated with this type of psychodynamic approach, which has again and again been stressed by our leading clinicians. It concerns the problem of causality and constitution. Psychosomatic concepts must be based on the fundamental question Are emotional factors truly etiologic agents or are pathophysiologic developments and personality characteristics both parallel processes, depending on inherent constitutional qualities?

Dr. Freed has completely omitted to mention the constitutional aspects of obesity. One should not overlook the significant contributions of Constitutional Clinics and the studies by George Draper, Julius Bauer and William Sheldon. According to Draper "General metabolism and body weight are inextricably bound up in the individual constitution of the person, and no broad understanding of the problem can be developed unless it is based on a knowledge of the individuality of each person's body build and energy characteristics." And Bauer says "All obese persons must have a certain individual predisposition, that is, they must have a weight regulating mechanism which is more readily overthrown than the normal one. All cases of obesity are to variable extent endogenous and constitutional in origin."

Being a psychiatrist, I am certainly sympathetic toward Dr. Freed's approach To be scientific, however, I believe one has to be careful with regard to evaluating causality principles in psychosomatic medicine. No therapy can be rational which is not based on sound recognition of constitutional potentials. No psychotherapy of obese patients has good prospects if constitutional limitations are ignored or overlooked.

F. A. Freyhan, M.D., Wilmington, Del.

[The letter of Dr. Freyhan was referred to Dr. Freed, who writes:]

To the Editor:—I am in agreement that there is a constitutional aspect to the development of obesity, so that there is in many persons an inherent tendency in this direction. I do, however, disagree that I failed to mention completely these principles. Perhaps I used different terms, but certainly from the following quotations there is a definite implication that such states exist:

"Human machines like other machines differ in efficiency, and the metabolically efficient human body will gain weight on the same intake of food on which the inefficient one will lose weight."

"It is not considered that these factors are specific causes for overeating, but simply they release the nervous energy into the channel of overeating in those persons who tend in that direction. The same psychic factors will produce in other subjects various types of psychosomatic disorders."

I do not list the psychic factors as causative or etiologic for the production of overweight, but rather inciting stimuli in individuals who tend in that direction. Certainly the inability of a patient to restrict the food intake to the proper level, whatever that may be, is purely an emotional problem. The difficulty in restraining the appetite is enhanced by the variety of psychodynamic drives associated with nervousness, social insecurity, childhood training and the like.

S. C. Freed, M.D., San Francisco.

[To this Dr. Freyhan comments:]

To the Editor:—If I may take the liberty to disagree with Dr. Freed's reply, it is for the simple reason that certain fundamental issues are under discussion.

My position is, I believe, identical with the ideas expressed by Drs. George Wilson and Charles Rupp in their article "Present Trends in the Practice of Neurology" in The Journal, February 22. Both doctors sharply criticize present trends in psychosomatic medicine, saying ". . . it appears that, save for a few isolated exceptions, most of the psychosomaticists have become too preoccupied with the aspects of the psyche, to the neglect of the soma."

Dr. Freed has not at all stressed constitutional aspects of obesity. His references to predispositions are vague and obscured by overemphasis of psychogenic factors. The fundamental problem is whether emotional problems per se, even as "inciting stimuli," cause obesity unless there is already an inherent, constitutional disposition. The term "constitution," which clinicians consider primarily essential in the problem of obesity, is never mentioned in Dr. Freed's article. His article conveys the impression that a psychiatric approach to the emotional problems of the obese individual is the primary therapeutic problem. This assumption, I feel, is not justified, because the constitutional potential limits a priori psychotherapeutic efforts.

The psychiatric profession, of which I am an enthusiastic member, should welcome the criticism of Drs. Wilson and Rupp and demand that psychosomatic studies be based on sound principles of internal medicine as well as psychodynamics.

F. A. Freyhan, M.D., Wilmington, Del.

PERMANENCE OF FOOTPRINTS

To the Editor:—I should like to draw your attention to a gross error in the article by Dr. Hyman published in The Journal for Dec. 7, 1946. Dr. Hyman's statement that the footprints of infants taken at birth are useless because they "change after a few months" and therefore are of no value in later establishing the identity of a person shows that Dr. Hyman has no understanding of structure and development of the dermal ridges. Skin patterns are established at the third and fourth fetal months, and from that time throughout life there is no significant alteration in the details of the ridges and the patterns they form. Dr. Hyman is perhaps under the misapprehension that the footprints record only the creases or folds of the skin, which of course do change.

It is quite true that in many institutions the footprints of infants are so poorly made that the dermal patterns are undecipherable. It is therefore important that medical attendants or nurses should be properly trained to take and to read the dermal patterns of both soles and palms.

Norma Ford Walker, Toronto.
Associate Professor of Human Biology, University of Toronto Department of Zoology.

NATIONAL DEPARTMENT OF HEALTH

To the Editor:—Referring to your copy of S. 545, it seems to me that the main thing is overlooked and that, to my mind, would be the creation of a department of health with a cabinet officer at the head of it. I believe we are about the only civilized people who do not have a minister of health. I do not imagine that the other departments, such as State, Treasury and Commerce, are governed by any such long complicated bill as S. 545 and a department of health could run without such minute directions.

Edward C. Ellett, M.D., Memphis, Tenn.

Medical Motion Pictures

FILM REVIEWS

Convalescent Care and Rehabilitation of Patients with Injury to the Spinal Cord. 16 mm., color, sound, 1,550 feet (1 reel), showing time forty-three minutes. Produced in 1946 by the Medical Department, U. S. Army. Procurable on loan from Office of the Surgeon General, U. S. Army, Pentagon Building, Washington, D. C. Attention: Chief of the Division of Education and Training.

This excellent picture presents the story and the care of the paraplegic patient from the time he is flown to a general army neurosurgical center until he leaves, walking on his splinted legs. The extraordinary facilities of a technical nature are clearly demonstrated; nowhere else can so much technical pressure be brought to bear for the benefit of the patient. There is some extraneous matter at the beginning dealing with the visits of relatives and the understandable emotional strain which is concomitant with wounds of this type. The first consideration is an evaluation of the patient's general and neurologic condition, and this is adequately shown. There is a short section on the care of the urinary bladder by tidal drainage, through a suprapubic cystostomy with cystometric readings, leading to the development of an automatic bladder. There is an excellent section on the care of decubitus ulcer both by sliding grafts and by whole thickness grafts taken from the posterior aspect of the thigh.

Disabling mass reflexes are seen with gross spasticity. As this prevents adequate nursing and the use of splints for walking, the treatment is shown to consist of anterior spinal root section from the eleventh thoracic to the fifth lumbar on both sides. The operation shows the identification of the first lumbar root by making use of the last tooth of the dentate ligament, which orients the operator. The result is completely flaccid lower limbs, which makes it possible to handle the patient much more easily with regard both to occupational therapy and to subsequent ambulation with braces.

Occupational therapy and morale building are stressed. Everything is done to make the patient personally independent. He is taught to develop power in his arms in order to move himself from bed to chair, and he is taught to care for his bladder. Finally he is taught useful things through which he may eventually earn a living. Stenographic work and radio making and repairing are among these. Finally the patients are taught to walk and to maintain ordinary everyday social contacts.

The emphasis is on technical equipment and mechanical aids, which are in abundance. Little is said about medication or the care of urinary tract infections. The mechanical removal of fecal material from the bowel is shown, but nothing is said about regulating the bowel. The section on the diet may be a little precious, but this may be excused by the necessity of attempting to estimate the number of calories the sick patient receives. The laminectomy for anterior rhizotomy shows the procedure fairly well, though it could be more carefully performed.

These are, however, only minor shortcomings, for the film is of great instructional value to all those unfamiliar with what is now routine treatment for paraplegics in the armed forces. The coordination of the numerous necessary facilities is a stupendous task which has been beautifully accomplished. It is to be hoped that some day civilian patients will have an opportunity to profit from a similar civil setup. The expense would certainly be justified, as this splendid motion picture clearly shows. Medical practitioners, students and specialists will be interested in what can now be done with patients they formerly regarded as almost hopeless. The photography is excellent.

Neurosurgery in an Overseas General Hospital. 16 mm., color, sound, 2,000 feet (1 reel), showing time fifty-five minutes. Produced in 1946 by the Medical Department, U. S. Army. Procurable on loan from Office of the Surgeon General U. S. Army, Pentagon Building, Washington, D. C. Attention: Chief of the Division of Education and Training.

Common army neurosurgical problems are set forth in a film that is divided into three sections dealing with peripheral nerves, penetrating head wounds and spinal cord injuries by missiles. Much of the first part, dealing with the care of the patient, is excellent. The color photography, especially of the operative fields, is poor; details are often scarcely discernible. The difficulty of obtaining detail is not always the fault of the photography, for the surgical field seems always to be covered with a thin layer of coagulating blood. The only means of keeping the wound dry appears to require suction. The ordinary use of gauze sponges would keep the wound cleaner and bring out more detail.

The peripheral nerve section is good and shows carefully planned preoperative and postoperative tests and exercises. The lesions demonstrated involve all the major nerve trunks. The operative technic as photographed leaves something to be desired, but the principles are sound. Tantalum cuffs are shown inserted round all sutures. This is optional and is contraindicated near joints, as the tantalum tends to work out of position. The section on penetrating wounds of the head is relatively short and demonstrates the removal of foreign bodies and tantalum cranioplasty. These are secondary operations, primary sutures and débridement having been carried out elsewhere. The encephalograms shown reproduced rather poorly. Brain abscesses, except in acute cases, are removed in toto; this is not demonstrated, but patients are shown after operation. In 1 case a large subcortical clot is removed. In the case with multiple indriven bone fragments, only one large fragment is removed under the eye of the camera and postoperative x-ray check is not demonstrated. The method of locating a metallic fragment by means of appropriate markings on the skull is shown. The section on spinal cord injuries concerns two typical gunshot wounds, one of the cauda equina and one in the midthoracic region. There is a quick view of the patients before operation on their air mattresses and with their tidal drainage. Nothing is said or shown concerning the infinite care of the skin and urinary tract nor the postoperative results, except to state that some of the patients came to walk with mechanical aids. The operations are both open to the technical objections already stated.

This would be a useful teaching film for medical students and would give some idea of the complexities of the problems which have to be faced. They would become aware of the fact that surgical procedure is only one in a series of steps involving the care of the patient. The film is rather long and when presented in its entirety presents more of a swift bird's eye view rather than anything that can be held and assimilated. It would probably be most useful divided and shown separately in its three principal sections of peripheral nerves, penetrating head wounds and gunshot wounds of the spinal cord.

The Story of Menstruation. 16 mm., color, sound, 400 feet (1 reel), showing time ten minutes. Produced in 1946 by Walt Disney Studios. Procurable on loan from International Cellucotton Products Company, 919 North Michigan Avenue, Chicago.

This excellent film is intended for showing to groups of adolescent girls in the 14-18 year age range to explain the physiology of menstruation with some practical corollaries.

It has long been a problem in schools how to present any material related to the reproductive processes without creating an atmosphere of tension, not to say fear and disgust. As one feminine member of a school board remarked, "I wish it were possible to present sex to girls in such a way that they would not thereafter associate the whole subject with old bewhiskered doctors threatening venereal disease."

This film is an answer to the problem; it accomplishes the extraordinary feat of teaching something essentially serious while preserving an air of good cheer and relieving the tension by unexpected humor. It consists entirely of animation, beautifully colored and accompanied by carefully worded commentary; it begins by indicating the manner in which the pituitary gland governs first the growth of the body and later the function of the ovaries. Next it shows ovulation and the passage of the unfertilized ovum. The thickening and the subsequent menstrual shedding of the endometrium is shown, and this is followed by suggestions as to bathing, diet, exercise and other hygienic measures in relation to menstruation. The film does not undertake too much, since it is specifically adapted to a particular group.

The introduction of this film into the schools should of course be accompanied by the teacher's guide and by the pamphlets for individual distribution.

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

NATIONAL BOARD OF MEDICAL EXAMINERS EXAMINING BOARDS IN SPECIALTIES

Examinations of the National Board of Medical Examiners and the Examining Boards in Specialties were published in The Journal, *March 29, page 964.*

BOARDS OF MEDICAL EXAMINERS

Alabama: Montgomery, June 24-26. Sec., Dr. D. G. Gill, 519 Dexter Ave., Montgomery 4.

Arkansas: * *Medical. Examination.* June 5-6. Sec., Medical Board of the Arkansas Medical Society, Dr. L. J. Kosminsky, Texarkana. *Eclectic.* Little Rock, June 5. Sec., Dr. C. H. Young, 1415 Main St., Little Rock.

California: *Written.* San Francisco, July 7-10. *Oral.* San Francisco, May 10-11. *Oral Clinical Examination for Foreign Medical Graduates.* San Francisco, June 21. Sec., Dr. Frederick N. Scatena, 1020 N. St., Sacramento 14.

Delaware: *Examination.* Dover, July 8-10. *Endorsement.* Dover, July 15. Sec., Medical Council of Delaware, Dr. J. S. McDaniel, 229 S. State St., Dover.

District of Columbia: * *Reciprocity.* Washington, June 9. Sec., Commission on Licensure, Dr. George C. Ruhland, 6150 E. Municipal Bldg., Washington 1.

Florida: * Jacksonville, June 24-25. Sec., Dr. Harold D. Van Schaick, 2736 S. W. Seventh Ave., Miami 36.

Hawaii: *Examination.* Honolulu, July 14-17. Sec., Dr. S. E. Doolittle, 881 S. Hotel St., Honolulu 53.

Idaho: Boise, July 14-16. Sec., Bureau of Occupational Licenses, Dr. S. M. Poindexter, Eastman Bldg., Boise.

Indiana: *Examination.* Indianapolis, June. Exec. Sec., Board of Medical Registration and Examination, Miss Ruth V. Kirk, 627 K. of P. Bldg., Indianapolis.

Kentucky: Louisville, Sept. 22-24. Sec., State Board of Health, Dr. P. E. Blackerby, 620 S. Third St., Louisville 2.

Maryland: *Medical Examination.* Baltimore, June 17-20. Sec., Dr. E. H. Kloman, 1215 Cathedral St., Baltimore. *Homeopathic.* Baltimore, June 10-11. Sec., Dr. J. A. Evans, 612 W. 40th St., Baltimore.

Michigan: * *Examination.* Detroit, June 16-18. Sec., Board of Registration in Medicine, Dr. J. E. McIntyre, 100 W. Allegan St., Lansing 8.

Minnesota: * Minneapolis, April 15-17. Sec., Dr. J. F. Du Bois, 230 Lowry Medical Arts Bldg., St. Paul.

Mississippi: Jackson, June 23-24. Asst. Sec., State Board of Health, Dr. R. N. Whitfield, Jackson 113.

Missouri: *Examination.* St. Louis, May 26-28 and June 9-11. Exec. Sec., Mr. John A. Hailey, Box 4, State Capitol Building, Jefferson City.

Nebraska: * *Examination.* Omaha, June. Dir., Bureau of Examining Boards, Mr. Oscar F. Humble, State Capitol Bldg., Lincoln.

Nevada: *Examination.* Carson City, May 5. Sec., Dr. G. H. Ross, 215 N. Carson St., Carson City.

New Jersey: Trenton, June 17-18. Sec., Dr. E. S. Hallinger, 28 W. State St., Trenton.

New Mexico: * Santa Fe, April 7-8. Sec., Dr. LeGrand Ward, 141 Palace Ave., Santa Fe.

New York: *Examination.* Albany, Buffalo, New York and Syracuse, June 23-26. Sec., Dr. Jacob L. Lochner Jr., State Education Bldg., Albany.

North Carolina: *Endorsement.* Raleigh, May 1, June 24. *Examination.* Raleigh, June 23-26. Acting Sec., Mrs. L. McNeill, 226 Hillsboro St., Raleigh.

North Dakota: Grand Forks, July 1-4. Sec., Dr. G. M. Williamson, 4½ S. Third St., Grand Forks.

Ohio: *Examination.* Columbus, June 17-20. Sec., Dr. H. M. Platter, 21 W. Broad St., Columbus.

Oregon: * *Endorsement.* Portland, April 25-26. Exec. Sec., Miss L. M. Conlee, 608 Failing Bldg., Portland 4.

Pennsylvania: Philadelphia and Pittsburgh, July. Acting Sec., Bureau of Professional Licensing, Department of Public Instruction, Mrs. M. G. Steiner, 351 Education Bldg., Harrisburg.

South Carolina: Columbia, June 23-25. Sec., Dr. N. B. Heyward, 1329 Blanding St., Columbia.

South Dakota: * Pierre, July 15-16. Sec., Medical Licensure, State Board of Health, Dr. Gilbert Cottam, Capitol Bldg., Pierre.

Texas: Austin, June 5-7 (tentative). Sec., Dr. T. J. Crowe, 918-20 Texas Bank Building, Dallas 2.

Vermont: *Examination.* Burlington, April 10-11. Sec., Dr. F. J. Lawliss, Richford.

Virginia: Richmond, June 18-21. Sec., Dr. K. D. Graves, 306 Medical Arts Bldg., Roanoke.

Washington: * Seattle, April 14-16. Sec., Miss Virginia Wotherspoon, Department of Licenses, Olympia.

Wyoming: *Examination.* Cheyenne, June 2. Sec., Dr. G. M. Anderson, Capitol Bldg., Cheyenne.

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* Basic Science Certificate required.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Arizona: June 17. Sec., Mr. Francis A. Roy, Science Hall, University of Arizona, Tucson.

Arkansas: Little Rock, May 7. Sec., Mr. L. E. Gebauer, 701 Main Street, Little Rock.

Colorado: Denver, June 4-5. Sec., Dr. Esther B. Starks, 1459 Ogden Street, Denver.

District of Columbia: Washington, April 21-22. Sec., Commission on Licensure, Dr. G. C. Ruhland, 6150 E. Municipal Bldg., Washington 1.

Florida: May 31. Final date for filing application is May 16. Sec., Dr. M. W. Emmel, University of Florida, Gainesville.

Iowa: Des Moines, April 8. Sec., Dr. Ben H. Peterson, Coe College, Cedar Rapids.

Michigan: Ann Arbor and Detroit, May 9-10. Sec., Miss Eloise Lebeau, 101 N. Walnut St., Lansing.

Nebraska: Omaha, May 6-7. Dir., Bureau of Examining Boards, State Department of Health, Mr. O. F. Humble, 1009 State Capitol Bldg., Lincoln 9.

New Mexico: *Examination.* Santa Fe, May 4. Sec., Miss Marion M. Rhea, 114 E. March St., Santa Fe.

Oregon: June 7. Sec., Mr. C. D. Byrne, University of Oregon, Eugene.

Rhode Island: *Examination.* Providence, May 14. Chief, Division of Professional Regulation, 366 State Office Bldg., Providence.

South Dakota: Vermillion, June 6-7. Sec., Dr. G. M. Evans, Yankton.

Washington: Seattle, April 8-9. Sec., Miss Virginia Wotherspoon, Department of Licenses, Olympia.

Wisconsin: Madison, April 12. Sec., Dr. William H. Barber, Scott & Watson Sts., Ripon.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Evidence: Court Not Bound by Preponderance of Expert Testimony.—The plaintiff was convicted of committing a lewd and lascivious act and of being a sexual pervert, from which judgments he appealed to the district court of appeal, second district, division 2, California.

Pursuant to the sexual psychopath provisions of the welfare and institutions code, the trial court appointed three physicians to examine the defendant and make their reports in writing. Two of them expressed the opinion that the defendant was a sexual psychopath; the third thought he was a sexual pervert. The defendant contended that this evidence did not support the finding that he was a sexual pervert. The court of appeals said that the trial court was not bound by a preponderance of the professional opinion but, on examination of the facts stated in the several reports, was at liberty to reach its own conclusions and to make its rulings in accord with the opinion of one of the physicians. The judgment of conviction was accordingly affirmed.—*People v. Parrish, 172 P. (2d) 89 (Calif., 1946).*

Insanity: Necessity for Evidence in Addition to Medical Certificate.—The petitioner was adjudged insane by order of the probate court and committed to the Veterans Administration Facility at Fort Custer, Michigan. From the order of commitment he appealed to the Supreme Court of Michigan.

It was the petitioner's contention that no competent evidence was produced at the hearing to prove his alleged insanity and that therefore the commitment was absolutely void. The probate judge based his findings on the testimony of the petitioner's wife (the only witness) and the certificates of two physicians. After examining the wife's testimony very carefully, the Supreme Court said that it did not prove insanity. We are mindful, the Supreme Court continued, that the probate judge also had before him the certificates of two duly appointed physicians, each of whom certified that petitioner was an insane person. Doubtless the probate judge relied mainly, if not wholly, on such certificates. But, concluded the court, it is settled law that an adjudication of insanity may not be based solely on the certificates of physicians appointed by the court to examine the alleged insane person. Accordingly the Supreme Court held that the order of commitment was void and that the petitioner was entitled to be discharged. —*In Re Haines, 24 N. W. (2d) 526 (Mich., 1946).*

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1937 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied with stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American J. Obstetrics and Gynecology, St. Louis

52:881-1066 (Dec.) 1946

Presidential Address: Ways of Doctors and Practice of Physic. E. A. Schumann.—p. 881.
Hydramnios: The Joseph Brettauer Memorial Lecture. L. C. Rivett.—p. 890.
Corpus Carcinoma: Study of 322 Cases. N. F. Miller and C. W. Henderson.—p. 894.
Clinical and Pathologic Aspects of Primary Sarcoma of Uterine Tube. L. C. Scheffey, W. R. Lang and F. B. Nugent.—p. 904.
Some Clinical Aspects of Rh Factor in Obstetrics. E. L. King and J. W. Davenport Jr.—p. 917.
*Review of Cases of Rh Isoimmunization During Past Five Years in Royal Victoria Montreal Maternity Hospital. N. W. Philpott, J. P. A. Latour and G. J. E. van Dorsser.—p. 926.
*Thrombophlebitis and Phlebothrombosis in Gynecologic Patients: Prophylaxis, Recognition, and Treatment. J. V. Meigs and F. M. Ingersoll.—p. 938.
Phlebothrombosis and Thrombophlebitis in Gynecology and Obstetrics. C. G. Collins and E. W. Nelson.—p. 946.
Origin of Certain Perisalpingeal Cysts. R. A. Reis.—p. 964.
Amenorrhea Not Associated with Pregnancy in Young Women. L. M. Randall.—p. 975.
Constriction Ring Dystocia. M. P. Rucker.—p. 984.
Environment in Obstetrics. J. H. Moore.—p. 993.
Endolymphatic Stromal Myosis. D. N. Henderson.—p. 1000.
Value of Plasma Pitocinase Determinations in Obstetrics. E. W. Page.—p. 1014.
Cyclic Changes in Physical and Chemical Properties of Cervical Mucus. W. T. Pommerenke.—p. 1023.
Graphic Portrayal of Relative Pelvic Size. W. F. Mengert and W. C. Eller.—p. 1032.
Time for Postpartum Sterilization: Report of 150 Cases; Bacteriologic Studies on Postpartum Uterus. F. E. Whitacre, with assistance of W. M. Loeb Jr. and Laura Loeb.—p. 1041.

Rh Isoimmunization.—Philpott and his associates reviewed the records of 12,114 deliveries at the Royal Victoria Montreal Maternity Hospital for cases of erythroblastosis, severe jaundice of the newborn, severe anemia of the newborn, hydrops, hemolytic anemia of the newborn or any other diagnosis which might have been classified under hemolytic disease of the newborn. A total of 37 cases was found, of which 30 could be verified either by the demonstration of Rh antibodies in the mothers or on the basis of the presence in the same case of a combination of several other diagnostic points. Observations on surviving livebirths proved the great importance of repeated blood transfusions. Seven of the 30 pregnancies were interrupted at about the thirty-sixth week for the purpose of lessening damage to the fetus, but only 1 living child resulted from these 7 interrupted pregnancies. The present attitude in the Royal Victoria Maternity Hospital is that all obstetric patients are typed with standard Rh_0 agglutinating serum. When a woman is Rh negative, an attempt is made to determine her husband's type. If indicated, Rh negative women are tested for antibodies at the third, sixth and eighth months of pregnancy. If antibodies are present in the pregnant woman, the type and titer are determined; the titration is repeated each month. Increase of the antibody titer to a level of 1:100 is indicative of fetal involvement.

Thrombophlebitis and Phlebothrombosis in Gynecologic Patients.—The material for this report by Meigs and Ingersoll comes from the Massachusetts General Hospital. Tables show the number of patients operated on each year, the number of veins interrupted and the deaths from massive pulmonary emboli. The types of operations which preceded the vein interruptions are listed, as is the number of patients having presumptive evidence of pulmonary emboli. All surgeons at this hospital are convinced that interruption of the femoral veins is essential after a sublethal embolus or infarct. Nearly all are agreed that interruption of the femoral veins is essential after the diagnosis of thrombophlebitis or phlebothrombosis has been definitely made. The danger to the patient from interruption of veins is minimal and the operation is life saving.

Delaware State Medical Journal, Wilmington

18:243-266 (Nov.) 1946

Pyelitis: Early Symptoms, Diagnosis and Treatment. J. C. Birdsall.—p. 243.
Early Malignancy of Larynx: Its Detection and Treatment. K. M. Houser.—p. 249.
Methods of Treatment and Transportation of Compound Fractures of Long Bones. G. O. Eaton.—p. 252.
Function of Immunization Clinic in General Hospital. G. J. Boines.—p. 255.
Surgery of Stomach. G. S. Serino.—p. 259.

18:267-296 (Dec.) 1946

Acute Anterior Poliomyelitis. J. B. Baker.—p. 267.

Endocrinology, Springfield, Ill.

39:361-440 (Dec.) 1946

Influence of Thyroid on Alloxan and Pancreatic Diabetes in Rat. B. A. Houssay, V. G. Foglia and C. Martinez.—p. 361.
Pituitary-Adrenal Cortical Control of Lymphocyte Structure and Function as Revealed by Experimental X-Radiation. T. F. Dougherty and A. White.—p. 370.
Distribution of Feulgen and 2,4-Dini-Trophenylhydrazine Reactions in Normal, Castrated, Adrenalectomized and Hormonally Treated Rats. S. Albert and C. P. Leblond.—p. 386.
Effects of Hypophysectomy, Castration and Testosterone Propionate on Hemopoiesis in Adult Male Rat. R. C. Crafts.—p. 401.
Effect of Stilbestrol on Resistance to Experimental Poliomyelitis. F. J. Curley and W. L. Aycock.—p. 414.
Effects of Insulin and Anterior Pituitary Extract on Blood Amino Nitrogen in Eviscerated Rats. Elizabeth G. Frame and Jane A. Russell.—p. 420.

Michigan State Medical Society Journal, Lansing

45:1551-1692 (Dec.) 1946

Conjunctivitis—Acute, Hemolytic Staphylococcus Aureus. M. D. Campbell.—p. 1615.
Comparative Study of Mercuhydrin and Mercupurin, Oral and Parenteral. M. B. Finkelstein and C. J. Smyth.—p. 1618.
Biomechanical Treatment of 100 Fractured Legs. A. J. Day.—p. 1625.
Preoperative Preparation of Patients with Carcinoma of Colon. J. C. Scully.—p. 1630.

New England Journal of Medicine, Boston

235:885-918 (Dec. 19) 1946

*Necrotizing Renal Papillitis: Form of Acute Pyelonephritis. S. L. Robbins, G. K. Mallory and T. D. Kinney.—p. 885.
Anoxia Neonatorum. C. L. Sullivan.—p. 894.
*Death Following Exposure to DDT: Report of Case. W. R. Hill and C. R. Damiani.—p. 897.
Diagnosis and Treatment of Skin Manifestations of Capillary Fragility. S. M. Peck and A. L. Copley.—p. 900.
Pheochromocytoma of Left Adrenal Gland.—p. 906.
Coronary Sclerosis, with Recent Thrombosis of Circumflex Branch of Left Coronary and Old Recanalized Thrombosis of Descending Branch of Left Coronary Artery: Myocardial Infarction.—p. 911.

Necrotizing Renal Papillitis.—Robbins and his associates discuss the clinical and pathologic aspects of the observations at necropsy in 26 cases of necrotizing papillitis of the renal pyramids, 19 of which occurred in diabetic and the remainder in nondiabetic persons. This lesion is a frequent type of acute pyelonephritis in diabetic patients. Clinically the cases divide themselves into a "fulminating" and a "subacute" group. In the former the presenting syndrome was one of sudden onset of severe systemic infection, often without localizing signs. The "subacute" cases usually presented obvious acute pyelonephritis for weeks to months until, without apparent prodromal symptoms, the urinary tract infection became much severer and the course assumed the character of the "fulminating" cases. Most of the deaths resulted from rapidly progressing uremia—8 in the diabetic group and all 7 in the nondiabetic. Some of the former, however, showed little renal insufficiency and death resulted from overwhelming infections. The pathogenesis is unrelated to any specific bacteria. It probably represents a severe type of inflammatory renal disease to which the diabetic patient and the patient with urinary tract obstruction are peculiarly susceptible.

Death Following Exposure to DDT.—Hill and Damiani report the death of a previously healthy man aged 47 twenty-five days after exposure to DDT. The symptoms began within twenty-four hours after exposure. The disease picture, both *clinically and at biopsy, simulated that of periarteritis nodosa*, and it is assumed that DDT possesses allergenic properties and should be included among other drugs that are believed to be capable of producing such a sensitizing reaction.

Philippine Medical Association Journal, Manila

22:313-364 (Aug.) 1946

Presidential Address. H. Acosta-Sison.—p. 313.
Geriatrics and Gynecology: Role of Surgery in the Aged. C. P. Manahan.—p. 323.
Management of Placenta Previa, with Special Reference to Willett's Method. G. Rustia and Gloria Tancinco-Yambao.—p. 327.
Pyelonephritis of Pregnancy. J. R. Villanueva, G. P. Marcelo and L. F. Torres Jr.—p. 331.
Incidence of Erythroblastosis Fetalis Among Filipinos. C. P. Manahan and M. Andaya.—p. 335.
Studies on Hydatidiform Mole. H. Acosta-Sison and G. T. Aragon.—p. 339.
Axial Torsion of Uterus. C. P. Manahan and J. Coronado.—p. 443.
Studies on Early Diagnosis of Chorioepithelioma. H. Acosta-Sison and G. T. Aragon.—p. 347.

Quarterly J. Studies on Alcohol, New Haven, Conn.

7:325-498 (Dec) 1946

Changes in Liver and Spleen of Normal and Allergic Rabbits After Intraparenchymal Injections of Serum, and Modifications Induced by Oral Administration of Alcohol. W. N. Rogers.—p. 325.
The Alcohol Dependent. A. Myerson.—p. 341.
Psychiatric Formulation of Alcoholism. G. N. Thompson.—p. 346.
Personality Traits of Alcohol Addicts. E. Bergler.—p. 356.
Alcohol and the Homeless Man. R. Straus.—p. 360.
Survey of Facilities for Care and Treatment of Alcoholism in New York City; The Committee on Public Health Relations of New York Academy of Medicine. E. H. L. Corwin and others.—p. 405.

Rocky Mountain Medical Journal, Denver

43:957-1076 (Dec.) 1946

Colorado State Medical Society: In Retrospect on the 76th Anniversary of Its Organization. A. J. Markley.—p. 975.
Resectable Pulmonary Lesions. W. R. Rumel.—p. 989.

Surgery, St. Louis

20:749-876 (Dec.) 1946

*Analysis of Experience with Streptomycin Therapy in United States Army Hospitals: Preliminary Report. M. E. DeBakey and E. J. Pulaski.—p. 749.
*Blood Loss in Operations: Statistical Comparison of Losses as Determined by Gravimetric and Colorimetric Methods. I. D. Baronofsky, A. E. Treloar and O. H. Wangensteen.—p. 761.
Chemical Alterations Occurring in Surgical Patient and Their Interpretations. W. E. Abbott.—p. 770.
Arterial Injuries of Warfare: Complications and Management. A. P. Preston.—p. 786.
Dermatologic Aspects of Amputation Stumps. W. C. Herold.—p. 804.
Construction of Pseudoareola. M. I. Berson.—p. 808.
*Primary Torsion of Omentum. W. A. Altemeier and C. E. Holzer.—p. 810.
Simultaneous Cholecystenterostomy and Choledochoenterostomy. D. R. Morton, E. Hathaway and A. Brunschwig.—p. 820.
Dissecting Diverticulitis of Colon. S. E. Cohen and B. L. Matthews.—p. 823.
Anatomic Hazards of Lingulectomy. E. A. Boyden.—p. 828.
Method of Cranioplasty Using Ready Made Tantalum Cranioprosthesis. H. J. MacKay and L. A. Russell.—p. 830.

Streptomycin Therapy in United States Army Hospitals.—The clinical investigation reviewed by DeBakey and Pulaski was carried out at thirty general hospitals. In the 706 cases of infections of various kinds, streptomycin was administered parenterally, locally, orally or in combination, depending on the type of infection. Systemic administration of streptomycin maintained therapeutically effective levels in blood and urine. Intrathecal and intrapleural administration proved essential for infections involving the meninges and pleura respectively. In enteric infections the drug must be given orally. In most infections the combined route of administration was found essential. Topical use of streptomycin has not been attended with strikingly beneficial results. In urinary tract infections the successful use of streptomycin depends on a normal flow of urine. Recurrent urinary tract obstruction, urinary retention and undrained or unsterilizable foci, including the prostate, predisposed to relapse or reinfection. Treatment under these circumstances produced drug fastness. Streptomycin appears useful in gonococcic urethritis, especially in cases which prove resistant to penicillin and sulfadiazine. In wound infections streptomycin is effective only as an adjunct to surgery. In enteric infections caused by streptomycin susceptible organisms, the results of treatment are likely to be impressive. In bacteremia highly impressive results were obtained, but eradication of the focus by surgery is essential to success. Experience in tuberculosis was limited, but results justify further studies. In typhoid, streptomycin would seem highly effective in the acute state. In tularemia, streptomycin appeared to be the most effective chemotherapeutic agent. Vestibular disturbance was the only serious complication to streptomycin therapy.

Blood Loss in Operations.—The objective of this investigation by Baronofsky and his associates was to make a comparison of blood loss as measured by the gravimetric method and the loss as computed from the acid-hematin technic. Blood loss data have been assembled for representative surgical procedures. It was found that gravimetric determination of gain in sponge weight provides a reliable estimate of blood loss in surgical procedures. During appendectomy, blood loss averaged 25.8 cc. Hernia and gallbladder procedures averaged 82.9 and 179.4 cc. respectively. Comparison of the data obtained from subtotal gastrectomy for ulcer and carcinoma (499.8 and 455.6 cc. respectively) shows an unimportant difference. Thyroidectomy entailed an average blood loss of 405.6 cc., diffusely enlarged goiters providing most of the bleeding. The average loss during radical mastectomy was 415.4 cc. The average for pneumonectomy and lobectomy was 1,399 cc.

Primary Torsion of the Omentum.—Primary torsion implies the absence of any recognizable etiologic factor such as hernia, neoplasm, adhesive bands or inflammatory processes, while torsion in the presence of any such pathologic process is classified as secondary. The present report is concerned with the primary type of omental torsion, a lesion much less common than the secondary type. Within the past year the authors have operated in 3 cases of gangrene of the omentum caused by unexplained torsion and have found 3 similar cases in the records of the Cincinnati General Hospital during the last twelve years. These 6 cases, and a seventh reported by Andrus in 1926, constitute the largest group observed in any single clinic. The cause of the condition is obscure, but adiposity and strenuous physical activity apparently are predisposing factors. The condition is usually confused with acute appendicitis but should be suspected in obese or robust persons complaining of pain of several days' duration in the right lower quadrant of the abdomen, beginning during strenuous physical activity and being unassociated with vomiting. The treatment of choice is excision of the gangrenous portion of the omentum with ligation of the vessels of its pedicle. The prognosis is excellent.

Virginia Medical Monthly, Richmond

74:1-46 (Jan.) 1947

Some Otolaryngologic Topics of Interest to Internist. W. W. Eagle.—p. 4.
Recent Developments in Gastric Surgery. G. W. Horsley.—p. 10.
Health and Vigor Depend on Soil. P. H. DeHart and R. M. DeHart.—p. 16.
*Trench Mouth (Vincent's Infection), Scurvy and Vitamin C. A. G. Schnurman.—p. 21.
Interpretation of Qualitative and Quantitative Serologic Reports. E. M. Holmes Jr. and Elsie P. Foxhall.—p. 28.

Trench Mouth, Scurvy and Vitamin C.—Schnurman maintains that the fusospirochetes are present in normal mouths as well as in trench mouth, so that a positive gingival smear alone is not sufficient evidence for making a diagnosis of trench mouth. If the vitamin C excretion in a twenty-four hour urine specimen is less than 13 mg., a positive gingival smear is of utmost diagnostic significance. As the result of deficiency in vitamin C an anaerobic state is created in the tissues and at the same time intercellular cement substance breaks down, allowing a port of entry to otherwise harmless saprophytes into an ideal medium where they become pathogenic. The author presents a technic for the rapid determination of vitamin C levels in body fluids and shows that patients with trench mouth who have low vitamin C diets improve without any other treatment than large doses of vitamin C.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Brain, London

69:157-232 (Sept.) 1946

Subdural Hemorrhage, Cysts and False Membranes Illustrating Influence of Intrinsic Factors in Disease when Development of Body is Normal. K. Inglis.—p. 157.
Fiber Connections of Subthalamic Region and Centromedian Nucleus of Thalamus. P. Glees and P. D. Wall.—p. 195.
Nutritional Neuropathies in Civilian Internment Camp, Hong Kong, January 1942, August 1945. D. A. Smith.—p. 209.
Meningitis Carcinomatosa: Report of 2 Cases. G. J. Dixon, A. S. Kerr and Mary E. Sharp.—p. 223.

British Journal of Dermatology and Syphilis, London

59:1-44 (Jan.) 1947

Psychologic Factors in Etiology of Certain Skin Diseases. R. Klaber.—p. 1.
Psychologic Factors in Skin Disorders. C. H. Rogerson.—p. 6.
Psychologic Factors in Etiology of Certain Skin Diseases. A. W. Watt.—p. 13.

British Medical Journal, London

2:975-1012 (Dec. 28) 1946

Tuberculosis in Industry. F. Heaf.—p. 975.
Internal Combustion Engine and Spread of Disease. G. M. Findlay.—p. 979.
Abacterial Pyuria, with Special Reference to Infection by Spirochetes. W. E. Coutts and R. Vargas-Zalazar.—p. 982.
Peripheral Nerve Injuries: Recent Progress in Treatment. T. B. Mouat.—p. 983.
*Acute Appendicitis in Aged. D. G. Simpson.—p. 986.

Acute Appendicitis in the Aged.—According to Simpson from 1 to 2 per cent of attacks of acute appendicitis occur in patients over 60 years of age. The symptomatology differs considerably from the usual pattern in younger patients, but nevertheless there is a fairly well defined syndrome in the aged. Pain is often poorly localized, though nearly always present, and becomes intense only when peritonitis has supervened. The general reactions of nausea, vomiting, fever and elevated pulse rate are not found, though a slight fever is recorded in some cases. The localizing signs of rigidity, tenderness and pain on rectal examination are vague and inconclusive or are absent. Thus in the early stages the patient does not appear ill. Hence many cases are not seen until peritonitis has developed. Gangrene, perforation and peritonitis develop rapidly. In this advanced stage the condition may be confused with intestinal obstruction, and time may be lost in attempts to locate a growth. The author discusses the therapy (1) when there is a confident preoperative diagnosis, (2) when acute appendicitis is merely suspected and (3) when acute appendicitis is not diagnosed before operation. An illustrative case at the advanced age of 85, with survival, is reported.

Journal Obst. & Gynaec. of Brit. Empire, Manchester

53:485-584 (Dec.) 1946

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J. Royal Inst. Public Health and Hygiene, London

9:365-408 (Dec.) 1946

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The Air of London. C. J. Regan.—p. 382.

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Lancet, London

2:931-966 (Dec. 28) 1946

Palindromic Rheumatism. F. P. Weber.—p. 931.
Bodily Changes During Abreaction. R. L. Moody.—p. 934.
Further Observations on Vitamin C Survey of Medical Students. M. P. Durham, G. E. Francis and A. Wormall.—p. 936.
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Practitioner, London

158:1-96 (Jan.) 1947

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Acute Cholecystitis. J. Walton.—p. 11.
Acute Pancreatitis. J. Morley.—p. 17.
Perforated Peptic Ulcer. C. F. W. Illingworth.—p. 24.
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Bandage in Varicose Conditions. R. R. Foote.—p. 60.
Lighting and Vision. H. C. Weston.—p. 67.
Hay Fever Prophylaxis in Royal Air Force. P. D. Bedford.—p. 73.
Pain and Its Problems: I. Physiology of Pain. E. D. Adrian.—p. 76.

Death Following Exposure to DDT.—Hill and Damiani report the death of a previously healthy man aged 47 twenty-five days after exposure to DDT. The symptoms began within twenty-four hours after exposure. The disease picture, both clinically and at biopsy, simulated that of periarteritis nodosa, and it is assumed that DDT possesses allergenic properties and should be included among other drugs that are believed to be capable of producing such a sensitizing reaction.

Philippine Medical Association Journal, Manila

22:313-364 (Aug) 1946

Presidential Address H. Acosta Sison —p 313
Geriatrics and Gynecology Role of Surgery in the Aged C. P. Manahan —p 323
Management of Placenta Previa, with Special Reference to Willett's Method G Rustia and Gloria Tancinco-Yambao —p 327.
Pyelonephritis of Pregnancy. J. R Villanueva, G. P. Marcelo and L F Torres Jr.—p 331
Incidence of Erythroblastosis Fetalis Among Filipinos C. P. Manahan and M Andaya —p 335
Studies on Hydatidiform Mole. II Acosta Sison and G. T. Aragon —p 339
Axial Torsion of Uterus C. P. Manahan and J. Coronado —p 443
Studies on Early Diagnosis of Chorioepithelioma H. Acosta Sison and G T. Aragon.—p 347.

Quarterly J. Studies on Alcohol, New Haven, Conn.

7:325-498 (Dec) 1946

Changes in Liver and Spleen of Normal and Allergic Rabbits After Intraparenchymal Injections of Serum, and Modifications Induced by Oral Administration of Alcohol W. N Rogers —p. 325.
The Alcohol Dependent A Myerson —p 341
Psychiatric Formulation of Alcoholism. G N Thompson —p 346
Personality Traits of Alcohol Addicts E Bergler —p 356
Alcohol and the Homeless Man R Straus —p 360
Survey of Facilities for Care and Treatment of Alcoholism in New York City, The Committee on Public Health Relations of New York Academy of Medicine. E H L Corwin and others —p 405

Rocky Mountain Medical Journal, Denver

43:957-1076 (Dec.) 1946

Colorado State Medical Society In Retrospect on the 76th Anniversary of Its Organization A J Markley.—p 975
Resectable Pulmonary Lesions W. R. Rumel —p 989

Surgery, St. Louis

20:749-876 (Dec) 1946

*Analysis of Experience with Streptomycin Therapy in United States Army Hospitals Preliminary Report. M E DeBakey and E J Pulaski —p 749
*Blood Loss in Operations Statistical Comparison of Losses as Determined by Gravimetric and Colorimetric Methods I D Baronofsky, A E Treloar and O H. Wangensteen —p 761
Chemical Alterations Occurring in Surgical Patient and Their Interpretations W E Abbott.—p 770
Arterial Injuries of Warfare Complications and Management A P. Preston —p 786
Dermatologic Aspects of Amputation Stumps W C Herold —p 804.
Construction of Pseudoareola M I. Berson —p 808
*Primary Torsion of Omentum W. A Altemeier and C. E Holzer —p 810
Simultaneous Cholecystenterostomy and Choledochoenterostomy. D. R. Morton, E Hathaway and A Brunschwig —p 820
Dissecting Diverticulitis of Colon S E Cohen and B L Matthews —p 823.
Anatomic Hazards of Lingulectomy E A. Boyden —p 828
Method of Cranioplasty Using Ready Made Tantalum Cranioprosthesis. H J MacKay and L. A. Russell —p 830

Streptomycin Therapy in United States Army Hospitals.—The clinical investigation reviewed by DeBakey and Pulaski was carried out at thirty general hospitals. In the 706 cases of infections of various kinds, streptomycin was administered parenterally, locally, orally or in combination, depending on the type of infection Systemic administration of streptomycin maintained therapeutically effective levels in blood and urine. Intrathecal and intrapleural administration proved essential for infections involving the meninges and pleura respectively. In enteric infections the drug must be given orally. In most infections the combined route of administration was found essential. Topical use of streptomycin has not been attended with strikingly beneficial results In urinary tract infections the successful use of streptomycin depends on a normal flow of urine. Recurrent urinary tract obstruction, urinary retention and undrained or unsterilizable foci, including the prostate, predisposed to relapse or reinfection. Treatment under these circumstances produced drug fastness. Streptomycin appears useful in gonococcic urethritis, especially in cases which prove resistant to penicillin and sulfadiazine. In wound infections streptomycin is effective only as an adjunct to surgery. In enteric infections caused by streptomycin susceptible organisms, the results of treatment are likely to be impressive. In bacteremia highly impressive results were obtained, but eradication of the focus by surgery is essential to success. Experience in tuberculosis was limited, but results justify further studies. In typhoid, streptomycin would seem highly effective in the acute state In tularemia, streptomycin appeared to be the most effective chemotherapeutic agent Vestibular disturbance was the only serious complication to streptomycin therapy.

Blood Loss in Operations.—The objective of this investigation by Baronofsky and his associates was to make a comparison of blood loss as measured by the gravimetric method and the loss as computed from the acid-hematin technic. Blood loss data have been assembled for representative surgical procedures. It was found that gravimetric determination of gain in sponge weight provides a reliable estimate of blood loss in surgical procedures During appendectomy, blood loss averaged 25 8 cc. Hernia and gallbladder procedures averaged 82 9 and 179 4 cc. respectively. Comparison of the data obtained from subtotal gastrectomy for ulcer and carcinoma (499.8 and 455 6 cc respectively) shows an unimportant difference. Thyroidectomy entailed an average blood loss of 405 6 cc, diffusely enlarged goiters providing most of the bleeding. The average loss during radical mastectomy was 415 4 cc The average for pneumonectomy and lobectomy was 1,399 cc.

Primary Torsion of the Omentum.—Primary torsion implies the absence of any recognizable etiologic factor such as hernia, neoplasm, adhesive bands or inflammatory processes, while torsion in the presence of any such pathologic process is classified as secondary. The present report is concerned with the primary type of omental torsion, a lesion much less common than the secondary type. Within the past year the authors have operated in 3 cases of gangrene of the omentum caused by unexplained torsion and have found 3 similar cases in the records of the Cincinnati General Hospital during the last twelve years. These 6 cases, and a seventh reported by Andrus in 1926, constitute the largest group observed in any single clinic The cause of the condition is obscure, but adiposity and strenuous physical activity apparently are predisposing factors The condition is usually confused with acute appendicitis but should be suspected in obese or robust persons complaining of pain of several days' duration in the right lower quadrant of the abdomen, beginning during strenuous physical activity and being unassociated with vomiting. The treatment of choice is excision of the gangrenous portion of the omentum with ligation of the vessels of its pedicle. The prognosis is excellent.

Virginia Medical Monthly, Richmond

74:1-46 (Jan.) 1947

Some Otolaryngologic Topics of Interest to Internist. W. W. Eagle —p 4
Recent Developments in Gastric Surgery G. W Horsley —p 10
Health and Vigor Depend on Soil. P H DeHart and R M DeHart —p 16
*Trench Mouth (Vincent's Infection), Scurvy and Vitamin C. A. G Schnurman —p 21.
Interpretation of Qualitative and Quantitative Serologic Reports E. M Holmes Jr. and Elsie P. Foxhall —p 28

Trench Mouth, Scurvy and Vitamin C.—Schnurman maintains that the fusospirochetes are present in normal mouths as well as in trench mouth, so that a positive gingival smear alone is not sufficient evidence for making a diagnosis of trench mouth If the vitamin C excretion in a twenty-four hour urine specimen is less than 13 mg, a positive gingival smear is of utmost diagnostic significance As the result of deficiency in vitamin C an anaerobic state is created in the tissues and at the same time intercellular cement substance breaks down, allowing a port of entry to otherwise harmless saprophytes into an ideal medium where they become pathogenic The author presents a technic for the rapid determination of vitamin C levels in body fluids and shows that patients with trench mouth who have low vitamin C diets improve without any other treatment than large doses of vitamin C

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Brain, London

69:157-232 (Sept.) 1946

Subdural Hemorrhage, Cysts and False Membranes Illustrating Influence of Intrinsic Factors in Disease when Development of Body is Normal. K. Inglis.—p. 157.
Fiber Connections of Subthalamic Region and Centromedian Nucleus of Thalamus. P. Glees and P. D. Wall.—p. 195.
Nutritional Neuropathies in Civilian Internment Camp, Hong Kong, January 1942, August 1945. D. A. Smith.—p. 209.
Meningitis Carcinomatosa: Report of 2 Cases. G. J. Dixon, A. S. Kerr and Mary E. Sharp.—p. 223.

British Journal of Dermatology and Syphilis, London

59:1-44 (Jan.) 1947

Psychologic Factors in Etiology of Certain Skin Diseases. R. Klaber. —p. 1.
Psychologic Factors in Skin Disorders. C. H. Rogerson.—p. 6.
Psychologic Factors in Etiology of Certain Skin Diseases. A. W. Watt. —p. 13.

British Medical Journal, London

2:975-1012 (Dec. 28) 1946

Tuberculosis in Industry. F. Heaf.—p. 975.
Internal Combustion Engine and Spread of Disease. G. M. Findlay. —p. 979.
Abacterial Pyuria, with Special Reference to Infection by Spirochetes. W. E. Coutts and R. Vargas-Zalazar.—p. 982.
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Pain and Its Problems: I. Physiology of Pain. E. D. Adrian.—p.

Presse Médicale; Paris

54:725-744 (Nov. 2) 1946

Bioclinical Research on Wine: Wine and Vestibular Chronologic Symptoms. G. Mouriquand, J. Coisnard and Mrs. V. Edel.—p. 725.

Actual Treatment of Kala Azar. P. Giraud and R. Bernard.—p. 725.

Colorectitis in Deported Persons. G. Faroy, J. Arnous and Richard. —p. 726.

*Influence of Sex of Donors and of Recipients on Incidence and Severity of Accidents in Course of Blood Transfusions. A. Hustin and R. Rémy.—p. 728.

Use of Emetine for Combating Severe Pyogenic Infections. E. Melchior. —p. 729.

Psychosomatic Medicine. H. Hécaen and H. Duchène.—p. 730.

Importance of Sex of Donors and of Recipients in Blood Transfusions.—Hustin and Rémy report 80 reactions (9.2 per cent) in 864 blood transfusions given to 425 men and 439 women at a blood transfusion center in Brussels during 1942. The incidence of reactions was 5.3 per cent for cases in which both donor and recipient were men and 17.3 per cent in those in which both donor and recipient were women. The reactions were more severe if the donor was a woman, and particularly if the recipient also was a woman. The ratio of reactions was 7.2 per cent if the donors were only men and 7.7 per cent if the donors and the recipients were of different sex. The difference of 0.5 per cent does not warrant the exclusion of women as blood donors, but crossing of sexes is suggested for blood transfusions.

Semaine des Hôpitaux de Paris

22:2011-2048 (Nov. 28) 1946

Considerations on Mortality Factors in Diabetic Coma. R. Boulin. —p. 2011.

Abbreviated Hyperglycemia Test and Diagnosis of Diabetes Mellitus. R. Boulin.—p. 2016.

History of Hypoglycemia. R. Boulin.—p. 2019.

Hypoglycemia and Traumatism of Pancreas. R. Boulin, Uhry and Piérard.—p. 2021.

*Sequels of Hypoglycemic Accidents. R. Boulin.—p. 2024.

Globin Zinc Insulin. R. Boulin and Piérard.—p. 2029.

Sequels of Hypoglycemia.—According to Boulin hypoglycemia may be followed by retinal hemorrhages, by severe cardiac insufficiency or by myocardiac infarction and particularly by nervous disorders of various types, such as hemiplegia, epileptic attacks and idiocy. These irreversible manifestations are related to a great variety of lesions such as edema or hemorrhage. There is no consensus with regard to their pathogenesis; the majority of the authors believe that some type of asphyxia of the nervous centers is responsible. The symptoms of hypoglycemia are frequently confused with those due to coma of acidosis. The consequent administration of supplementary massive doses of insulin aggravates the hypoglycemia. Intravenous injection of hypertonic glucose solution, calcium gluconate and vitamin B_1 is the treatment of choice.

Schweizerische Zeitschrift für Tuberkulose, Basel

3:165-316 (No. 3) 1946

Renal Tuberculosis. H. U. Gloor.—p. 165.

*Silicosis and Hematogenous Tuberculosis. R. Zollinger.—p. 205.

Investigations on Pulmonary Tuberculosis Among the Underprivileged and Relations to Economic Condition. J. Bucher.—p. 279.

Artificial Paralysis of Diaphragm and Pneumoperitoneum. G. Maurer and J. Morin.—p. 309.

Silicosis and Hematogenous Tuberculosis.—Pathologic anatomic studies on 8 patients revealed to Zollinger that the association of silicosis with tuberculosis produces the anatomic conditions for increased passage of tubercle bacilli into the blood. The small pulmonary arteries and veins undergo some destructive inflammation and are thus deprived of their elastic tissue, an important defensive element against the tuberculous invasion. Silicosis produces many more contacts between tuberculous foci and the vessels than tuberculosis alone. In this way the tendency to hematogenous spread in the combination of tuberculosis and silicosis is explained. Furthermore, the destruction of lymph nodes by silicotic granulation tissue transfers tubercle bacilli into the blood directly as well as through the thoracic duct. The vascular damage due to silicosis plays a predominant part in the hematogenous dissemination.

American Review of Soviet Medicine, New York

4:99-192 (Dec.) 1946

Filtrability of Tumors Induced by 1,2,5,6-Dibenzanthracene. L. A. Silber—p. 100.

Tumor Origin as Determined by Tissue Culture. A. D. Timofejevski. —p. 106.

Toxin Therapy of Experimental Cancer: Influence of Protozoan Infections on Transplanted Cancer. G. Roskin.—p. 111.

*Cytotoxic Factor in Blood of Cancer Patients. G. Roskin.—p. 115.

Toxicity of Blood in Cancer: Serodiagnosis of Malignant Tumors. G. Roskin—p. 118.

*Cancerolytic Substance of Schizotrypanum Cruzi. N. G. Klyueva and G. Roskin.—p. 127.

Gastric Resection for Cancer. I. N. Ishchenko.—p. 130.

Recognition of Gastric Carcinoma. S. M. Katsnelson.—p. 134.

Bronchogenic Carcinoma. R. G. Shik.—p. 142.

Diagnosis of Malignant Growths from Fresh Smears. A. Y. Altgauzen. —p. 148.

Transplanted Cancer of Liver. L. S. Morozenskaya.—p. 152.

Cytotoxic Factor in Blood of Cancer Patients.—Roskin and Nastyukova demonstrated toxicity of the blood of patients with malignant tumors as well as of animals with induced tumors. The method employed was based on sensitivity of the paramecium to the toxic factors in the blood of cancer patients. The toxic effect which manifested itself in the destruction or in delayed division of the paramecium depended on two factors: one, specific cytotoxic factor and another which was apparently identical with the complement. Roskin attempts to demonstrate the specific toxicity of the serum of cancer patients. He hopes that clinical tests on a wider scale will give more information as to the species specificity of the toxic factor, the early toxicity in the blood of cancer patients and the prognostic value after irradiation or operation as well as the nature of the factor.

Cancerolytic Substance of Schizotrypanum Cruzi.—Klyueva and Roskin found that when mice with transplanted adenocarcinoma are infected with the South American trypanosome Schizotrypanum cruzi, the causative agent of Chagas' disease, it is possible to obtain cures in 70 per cent and a slower rate of tumor development in the remainder. This inhibitory action of Schizotrypanum is not limited to adenocarcinoma of mice but with less clearness may be shown for Crocker sarcoma, cancers 63 for the rat cancer of Flexner-Jobling. In normal animals the Schizotrypanums at certain stages of the infection gather in internal organs; in cancer animals the organisms gather in the tumor, that is, there is a tumor tropism phenomenon. The Schizotrypanums invade the malignant cells, in which degenerative changes may soon be noted, beginning with destruction of the nucleus and gradually the dissolution of the cell.

Nordisk Medicin, Gothenburg

32:2309-2380 (Oct. 11) 1946

Present Day American Surgery: Some Travel Impressions. G. Bauer. —p. 2309.

Hospitalstidende

Chemotherapy in Appendicitis-Peritonitis. F. Sørensen.—p. 2313.

Norsk Magasin for Lægevidenskapen

*Roentgenologic Determination of Size of Heart. T. Denstad.—p. 2341.

Hygiea

Congenital Cystic Fibrosis of Pancreas. K. Kaijser and C. W. Lundquist.—p. 2361.

Roentgenologic Determination of Size of Heart.—Denstad compared measurement of the size of the heart by Groedel's lung-heart quotient and the heart volume per square meter of body surface according to Jonsell's modification of Rohrer-Kahlstorf's formula in 377 adult patients (152 men, 225 women), 45 men and 60 women having no cardiocirculatory disturbances. He asserts that as a rule beginning enlargement of the heart is not demonstrable by either of these methods. Volume determination affords a more accurate expression of the size of the heart than the quotient. The heart is smaller in women than in men and also in relation to the breadth of the thorax and the body surface. In series determinations both methods are satisfactory, but here also volume determination gives a better picture of volume changes. In double determination caution is called for in drawing conclusions as to true changes in the size of the heart, especially in case of smaller deviations. Despite its important place in cardiologic diagnosis, x-ray determination of the size of the heart should supplement clinical evaluation.

Book Notices

An Integrated Practice of Medicine: A Complete General Practice of Medicine from Differential Diagnosis by Presenting Symptoms to Specific Management of the Patient. By Harold Thomas Hyman, M.D. Volumes I-IV, and Index. Cloth. Price, $50 per set. Pp. 1,032; 1033-2010; 2011-3095; 3097-4131; 4133-4336, with 1,184 illustrations and 310 Differential Diagnostic Tables. W. B. Saunders Co., W. Washington Sq., Philadelphia 5, 1946-1947.

The ultimate aim of the author was the production of an integrated practice of medicine written to meet the requirements of the general practitioner. This attempt to correlate the great advances made in the various specialties to the immediate problem of the patient in order to enable the practicing physician to view his patient not as a complex of isolated systems but as an integrated individual is most commendable. The recent progress in psychosomatic medicine has been concerned with this emphasis on the integration of the entire organism. More and more the necessity for a broader knowledge of all the specialties becomes apparent. The general practitioner should be able to serve competently from 60 to 80 per cent of the patients who consult him; the rest may require additional consultation. In the former group a variety of symptoms and diseases may tax the ingenuity of the practitioner to the utmost. Consequently a ready reference library is essential, and for that purpose these books are admirably suited and can be recommended.

Volume I is divided into six sections, on the general reactions of bodily tissues, infections, allergy, neoplasms, metabolism and poisoning. An admirable attempt is made in the first section to review briefly the basic principles of histology, cellular physiology and biochemistry, pathology and pathologic physiology. Unfortunately the author hurries into a series of tables on the differential diagnosis of hypopyrexia and hyperpyrexia instead of carrying to completion, in a somewhat more detailed fashion, his plan of refreshing the practitioner with a renewal of acquaintanceship on some of the more important aspects of the basic sciences as related to tissue physiology and pathology.

The section on infections is introduced by a short review of bacteriology, serology, immunology and nursing care of the infectious patient. Chemotherapy and antibiotics are discussed along with the older anti-infective agents before the specific infectious diseases are described. Infectious diseases are arranged and discussed in the familiar textbook fashion, but the attempt to tabulate all information which can be put into tables and to include in the discussion of each disease a multitudinous array of scientific facts sometimes leads to confusion. One reads of the pneumococcus and its characteristics, modes of invasion, sensitivity to serums, sulfonamides and penicillin but is abruptly startled to find himself confronted by advice to refer to such and such a page in volume III for a discussion of lobar pneumonia. Admitting the difficulties in organizing a complete practice of general medicine in a single textbook of four volumes, the multiplication of tables and numerous instructions to refer to other pages envisages the weary physician thumbing through a chain of page references one after the other to complete his picture of a single disease process. In general, the information on infectious diseases is adequate and current with rather more space devoted to laboratory data than to facts of value in bedside examination and diagnosis. Color plates of exanthems, microscopic slides and primary lesions are excellent.

The tabulated treatment schedules for syphilis should prove valuable. Eighteen pages are devoted to allergy and of necessity include only a superficial discussion of the subject. However, other manifestations of allergic responses are discussed in sections where the particular shock organ involved would naturally place them. The section on neoplasms is little more than a brief discussion of pathology and modes of treatment and could well be omitted, since the various tumors are described in the discussion of the disease processes in each body system in other sections of the text. The section on metabolism is divided into four chapters, on an introduction to the study of metabolism and nutrition, which includes a brief, concise description of metabolism of the major food components, minerals and vitamins; the American diet; practical dietotherapy; differential diagnosis, and the management of the common disorders of metabolism. The information presented is sufficient to meet the needs of the practitioner. The section on the circulatory system completes volume I. It begins with the basic physiology of the cardiovascular system and covers the functional and organic disturbances encountered in practice. A chapter on electrocardiography with eighty representative tracings is included. Tables of normal and abnormal variations are given. Unfortunately, except for an expert, this chapter is quite confusing and would not enable the practitioner to interpret his own tracings, yet one gains the impression that this was intended in this chapter. On the whole, this entire section is complete and concise and contains frequent personal opinions of the author which he has found successful in practice. This is a welcome departure from the usual textbook type of presentation.

Volume II consists of sections on the blood, endocrine, eye, nervous and digestive systems. The chapters on psychiatry and neurology have been written in a clear and concise manner and adequately meet the needs of the practitioner. In the discussion of hematologic conditions, the tables were found to be of great help in understanding the many variations. The chapter on the eye was found to be adequate for the purposes of the general practitioner. In the chapter on endocrinology there are some assertions which are open to criticism. For instance, on page 1254 it is stated that a glucose tolerance is mandatory if the fasting blood sugar is below 200 mg. Repeated high fasting blood sugar levels may be as diagnostic as a glucose tolerance test. On page 1250 the normal fasting blood sugar levels are given to be 120-150 mg. per hundred cubic centimeters. These are higher than the generally accepted levels in use today. It is also stated that a low basal metabolic rate is an indication for thyroid medication. A low basal metabolic rate may actually be misleading, especially in the management of obesity, since the test is calculated on the basis of actual and not ideal weight. Also the use of thyroid when diabetes is present can be quite hazardous.

Volume III consists of sections dealing with the respiratory, urinary, reproductive, skeletal and locomotor systems as well as obstetrics and pediatrics. The same general procedure is followed throughout with the frequent use of tables and cross references. On the whole, the descriptions of the various disease entities are accurate and the space devoted is commensurate with the relative importance and frequency of the disease. The atypical pneumonias, in particular, are adequately discussed. The superiority of frequent chest roentgenograms over the routine physical examination for the detection of early subclinical tuberculosis is not sufficiently emphasized. By the time signs of activity appear the process can no longer be considered "early" tuberculosis. In particular, the diuretics are well covered and completely presented.

Volume IV consists of sections on the tegumentary system, physical diagnosis, laboratory methods, therapeutics, pharmacotherapy, major and minor surgery, prognosis and an appendix. The section dealing with the integument covers 366 pages and contains many tables of differential diagnosis plus a sizable number of excellent colored plates. Many uncommon and, in fact, extremely rare conditions even in a dermatologic practice are discussed at some length. The author has devoted too much space to a discussion of these cutaneous disorders, and too much emphasis is placed on the infrequently occurring diseases. Here again some of the diagnostic tables tend to be confusing. In contrast to the other sections, the chapter dealing with the history and physical diagnosis seems unnecessarily elementary and superfluous in a work of this kind. The section dealing with laboratory methods includes technical considerations as well as normal and abnormal findings and the respective conditions in which the latter occur. Approximately 160 pages are devoted to medical therapeutics, which includes psychotherapy, physical therapy and drug therapy. This is followed by a section in which minor and major surgical procedures are discussed. There is a short section in which prognostic factors are considered. Finally, the appendix includes chapters on such subjects as establishing an office practice, glossary of hematology, occupational hazards and rehabilitation and convalescent care.

These volumes do accomplish the avowed purpose of the author; they will prove to be of distinct value to the general practitioner who desires a readily accessible and compact review of the various branches of medicine. Sufficient information is given in a manner that will enable the practitioner to evaluate more adequately the problems presented by his patients and to become more expert in the methods of diagnosis.

Hygiene: A Textbook for College Students on Physical and Mental Health from Personal and Public Aspects. By Florence L. Meredith, B.Sc., M.D., Professor of Hygiene and Public Health, Tufts College, Boston. Fourth edition. Cloth. Price, $4. Pp. 838, with 155 illustrations. Blakiston Company, 1012 Walnut St., Philadelphia 5, 1946.

This is a complete revision of a widely used and valuable textbook on college hygiene. In the preface the author states as the theme which runs through the book "what health situations exist in the lives of individuals and peoples, what health objectives arise from them, and what action is scientifically appropriate on the part of the layman, especially the college student." With this theme in mind the author presents the usual material on personal and public health in a manner which should arouse the interest of college students in their own health problems and motivate them to seek a solution of such problems. In this edition not only has there been a revision to bring statistical and other material up to date but there has been a complete rearrangement of much of the material. The six parts and forty-nine chapters in the previous edition have been rearranged and expanded into nine parts with fifty-seven chapters. New chapters have been written to give emphasis to some of the major health problems such as heart disease, cancer, rheumatism and allergic conditions. An enlarged and much improved chapter on heredity has been included. Many of the anatomic and other illustrations have been redone in a manner which greatly improves the illustrative material. This is unlike most textbooks on college hygiene in that Dr. Meredith does not separate the discussion of the various aspects of health into personal and public as such but rather combines the personal and public health aspects of all topics as they are discussed. This approach has much to recommend it. One criticism which may be made of this as of former editions is its length. Many instructors feel that a textbook of 800 pages is too long for class use. In some instances also it seems that the detailed anatomic descriptions and terminology are too complex for the average college student and could have been simplified to good advantage. The great improvements which have been made in the revision should make this textbook used even more widely than in the past. It can be recommended for use by college students and others interested in the general field of health.

Textbook of Biochemistry. By Benjamin Harrow, Ph.D., Professor of Chemistry, City College, College of the City of New York, New York. Fourth edition. Cloth. Price, $4.25. Pp. 592, with 144 illustrations. W. B. Saunders Company, W. Washington Sq., Philadelphia 5; 7 Grape St., Shaftesbury Ave., London, W. C. 2, 1946.

As the rapid and extensive advances in biologic chemistry necessitate frequent revisions and editions of a textbook in this field, the new edition is highly welcomed. Much of the newer knowledge has been incorporated. Treatment is given to such newer topics as transamination, transmethylation, thiouracil in hyperthyroidism, alloxan diabetes and the antibiotics. No mention, however, is made of the interesting spreading phenomenon which involves hyaluronic acid and the enzyme hyaluronidase. Immunochemistry is inadequately treated. These topics will no doubt receive adequate consideration in the next edition. An appendix has been added; it deals with a variety of topics many of which could have been better discussed in their proper place in the text.

The claim is set forth that more clinical material has been added throughout the book. These additions nevertheless are too meager to be considered a great improvement over the third edition. It is to be hopd that more clinical material will be found in the fifth edition. It is taken for granted that each successive edition is an improvement over the last edition. In this respect Harrow's book has shown consistent improvement.

The paucity of clinical integrations and correlations is not to be taken as adverse criticism: it holds for all the textbooks in biochemistry at present available. Our textbooks in this field seem to be written with an eye to the capturing of the greater buying market which embraces students of agriculture, sanitary engineering, nutrition, dietetics, dentistry and pharmacy, and advanced students in general chemistry or biology. Unless the teaching of biochemistry is permeated with medical implications, as is the teaching of physiology, pharmacology and especially bacteriology and pathology, the subject will continue to stand alone and apart in the medical curriculum. Because of this isolation it yet remains a subject which medical students look on with no too great a show of kindness and as an academic drudgery in which a passing grade must be attained in order to advance from one class into another.

The references at the end of each chapter are excellent. These make a specialty of reviews rather than of individual original papers. Since students carrying a full academic load as a rule are crowded for time and have little opportunity for outside reading, the text could be materially improved by incorporating more of the highlights of these reviews.

The book has many good points to recommend it. The chapters on vitamins and hormones cover the subject well and are interestingly illustrated by pictures of animals and of human beings displaying signs of vitamin deficiency or hormonal inadequacy or excess. Excellent are the chapters dealing with the intermediate metabolism of carbohydrates, fats, lipids and proteins and the chapters dealing with biologic oxidations and biologic detoxications.

The new edition can be profitably placed in the hands of students of medicine and of physicians who wish to keep abreast of the times in the ever expanding field of biochemistry and who wish to make their own integrations between medicine and biochemistry. It is to be remembered that the newer knowledge in the latter field often parallels advances made in the fundamental understanding of the cause of disease and in the application of proper therapeutic procedures.

The Psychology of Adolescence. By Karl C. Garrison, Associate Professor of Education and Psychology, Teachers College of Connecticut, New Britain. Third edition. Cloth. Price, $4.65. Pp. 355, with 22 illustrations. Prentice-Hall, Inc., 70 5th Ave., New York 11, 1946.

This is written primarily for college students, parents and teachers. It is also a textbook for students of adolescent behavior, in which text is supplemented by comprehensive bibliographies. An introductory section defining adolescence and classifying briefly the problems of this age period is followed by a section dealing with physical and mental development, emotional growth and adolescent attitudes and interests. Detailed discussion of personality development during adolescence and adaptation at home, in the school and in the community is presented. Social and sexual development are thoughtfully, if briefly, considered. A final section is directed to guidance of adolescents. Here physical and mental hygiene principles and the prevention of delinquency and of educational and vocational needs are summarized. It is a well written book in which there has been careful selection of the material presented. It can be profitably read by parents, by teachers and by adolescents. It deals with the primarily socially determined problems of behavior, although the author fully recognizes the important biological factors in adolescent behavior and the crucial significance of childhood relationships and training. As a work on the mental hygiene of adolescence it is excellent. The counselor who must deal with the individual adolescent who presents problems reflecting deviations in personality development will require more specific understanding of psychodynamics than are offered in this textbook. The extensive bibliographies are meager in reference to the technical and clinical works in which childhood and adolescent behavior are thus dynamically interpreted.

A Guide for the Tuberculous Patient. By G. S. Erwin, M.D., Medical Superintendent, Liverpool Sanatorium, Frodsham, Cheshire. American edition revised and edited by Henry C. Sweany, M.D., Medical Director of Research, Municipal Tuberculosis Sanatorium, Chicago. Paper. Price, $1.50. Pp. 126. Grune & Stratton, 381 4th Ave., New York 16, 1946.

In both the preface and the introduction the authors call attention to the importance of information on tuberculosis to the patient. This can best be provided by a small volume written with as few scientific words as possible so it can be easily read by patients, regardless of previous education and training. This volume is a fine example of such an accomplishment. The authors have long been in the field of tuberculosis and are highly respected by the medical profession for their store of information and fine judgment. There are ten chapters on such subjects as the cause of tuberculosis, diagnosis, complications, treatment, public health aspects and nonpulmonary tuberculous lesions. The patient is told practically everything that he needs to know in order to cooperate to his best advantage with professional workers. Because of differences in such factors as the prevalence of tuberculosis in various parts of the world or even in the same country, it is impossible to make statements concerning phases of the disease that are applicable everywhere. For example, the assertion that primary infection usually occurs in childhood, while applicable to many nations, does not apply to vast areas of the United States, where far more infections occur among adults than among children because of the low infection attack rate and the many more years devoted to adult life than to childhood. In addition to discussions of the fundamentals of tuberculosis, the authors have manifested excellent judgment in the presentation of subjects of special current interest, such as mass surveys, vaccination, aviation, life insurance, tuberculosis and childbearing, and streptomycin. Every physician who treats tuberculosis will find this book of distinct value to his patients.

Pasteur. By Henri Mondor. Paper. Price, 150 francs. Pp. 189, with illustrations. Éditions Corrêa & Cie, 166 Boulevard du Montparnasse, Paris, 1945.

The physician interested in Pasteur may wish to include this recent biography in his collection, though it offers little that is new. The well known facts of his life have been presented in much more interesting manner by other biographers. The personal history, the human side of Pasteur, the significance of family and religious and academic training are hardly touched on. Only the dogged persistence of Pasteur in the face of apparent failure and painful rebuke is emphasized, as well it should be, for it was the basis of Pasteur's ultimate success. Pasteur was not an unusually good student; he was by no means a genius in the usual implication of sudden flashes of inspiration and intuitive penetration of dark fields. Pasteur's great contributions follow a clearly defined and logical course of reasoning in an orderly steplike fashion, and each step was carefully built up by hard work and tenacious adherence to a mental pattern. Pasteur was a far greater man than the rather colorless figure that Henri Mondor has presented to us in this book.

Oral Diagnosis and Treatment: A Textbook for Students and Practitioners of Dentistry and Medicine. By Samuel Charles Miller, D.D.S., F.A.C.D., Associate Professor in Charge of the Periodontia Department, New York University College of Dentistry, New York, and Thirty Contributors. With an introduction by Allen T. Newman, M.S., D.D.S. Second edition. Fabrikoid. Price, $10. Pp. 903, with 613 illustrations. Blakiston Company, 1012 Walnut St., Philadelphia 5, 1946.

This is a book of unusual value and interest to both practitioners and students of medicine and dentistry. Few physicians realize the number of serious systemic conditions that have their first clinical manifestations in the oral cavity, for instance measles, scarlet fever, diabetes, blood dyscrasias, including pernicious anemia, metallic poisoning and many of the occupational diseases. The thirty contributors have been selected because of their ability to present the material of their respective chapters. The material in each chapter is so arranged as to make it easily available for reference. Each chapter is supplied with a bibliography and suggested reading.

The chapters of special interest to the physician and medical student are chapter 1, on the science of oral diagnosis, by Samuel Charles Miller, D.D.S.; chapter 2, on head pain, by R. J. Behan, M.D., assisted by B. J. Johnston Jr., M.D.; chapter 3, on pain of dental origin, by John Oppie McCall, D.D.S.; chapter 6, on diseases of the oral mucous membranes exclusive of neoplasms, by George M. MacKee, M.D., and Anthony C. Cipollaro, M.D.; chapter 20, on tumors of the oral mucous membrane, by George M. MacKee, M.D., and Anthony C. Cipollaro, M.D.; chapter 21, on mouth infections and their relation to systemic disease, by Harold Stearns Vaughan, M.D., D.D.S., and Louis R. Burman, Ph.G., D.D.S., and chapter 24, on oral manifestation of endocrine dysfunctions, by William Wolf, Ph.D., M.D. Of special interest at this time are the chapters on oral and dental diseases of occupational origin, by J. A. Salzmann, D.D.S., and on acrodontia (aviation dentistry), by Lieut. Col. James M. Mullen, D.D.S., Dental Corps, Army of the United States.

The book deserves a place in the reference library of every physician and dentist who is called in consultation.

Practical Malariology. Prepared under the Auspices of the Division of Medical Sciences of the National Research Council by Paul F. Russell, M.D., M.P.H., Colonel, M. C., A. U. S., Parasitology Division, the Army Medical School, Luther S. West, Ph.D., Head of Biology Department, Northern Michigan College of Education, Marquette, Michigan, and Reginald D. Manwell, Sc.D., Professor of Zoology, Syracuse University, New York. Foreword by Raymond B. Fosdick, President of The Rockefeller Foundation. Cloth. Price, $8. Pp. 684, with 238 illustrations. W. B. Saunders Company, W. Washington Sq., Philadelphia 5; 7 Grape St. Shaftesbury Ave., London W. C. 2, 1946.

Dr. Russell had a distinguished career as field director in malaria for the Rockefeller Foundation before he became head of the malaria section of the Office of the Surgeon General of the United States Army during the recent war. While in the Army, Dr. Russell served for a time as chief malariologist for the American forces in North Africa and Italy. Thus his experience in malaria control has been unusually extensive.

As stated in the preface, the subject matter of the volume has been derived mainly from the experience of the authors. Their aim has been to provide information of a practical nature for day to day use in the clinic or in the field. Having appeared after the war, the book is designed primarily for civilian rather than for military use. The restrictions which were imposed during the war have since been relaxed, so that it has been possible for the authors to discuss all the important new developments in malariology.

The text is divided into six sections, on the parasite, the mosquito, the man, the community, prophylaxis and control, and therapeutic malaria. An appendix contains an extensive key to Anophelines of the world, useful tables of equivalents and a voluminous index.

The historical introduction stimulates interest and provides perspective. The sections dealing with the parasite present known facts clearly, simply and systematically. A valuable feature of these sections is that gaps in knowledge which need to be filled are pointed out.

The colored illustrations of plasmodia are excellent. Their value is increased by the numbered documentation which explains them and which is made possible without injuring the plate by the use of transparent interleaves. Some of the halftones in these sections have a blurred appearance.

The section on laboratory and field technic is informative and useful. Recent work on the cultivation of malaria parasites is described. Some of the information contained in the sections which deal with the taxonomy, life cycles and bionomics of malaria transmitting mosquitoes has been presented in convenient tabular form. The halftones and diagrams of this section are excellent. The symptomatology and the treatment of malaria are succinctly and clearly presented. The epidemiology and the methods of controlling malaria are dealt with in extenso. It is especially on these aspects of malariology that Dr. Russell's experience qualifies him to speak with authority. The sections are well illustrated with halftones and diagrams.

Although presented by the authors in the modest guise of a practical manual, this volume is also an excellent book of reference. The subject matter throughout is presented clearly and concisely, and the approach is scholarly.

Operative Surgery. By George Bankoff, M.D., D.Ch., F.R.F.P.S. Fabrikoid. Price, £3 3s. Pp. 416, with 479 illustrations. Medical Publications, Ltd. 47 Princes Gate, London, S. W. 7, 1946.

This ambitious little book attempts to cover almost all the fields of surgery. In this wise it is a typical product of the English, who are given to publish handbooks, some of which are excellent. Few surgeons in this country would feel that a work of this nature would prove of value either for teaching or for advanced study. Typically much of it is anatomic, and little space is devoted to physiology, indications or complications. The illustrations are excellent and numerous. Descriptions of technics are limited but concise and well expressed. There is much common sense in its content. This volume can be of use as a basis for a review of surgery.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

TREATMENT OF AMEBIASIS

To the Editor:—What is the present practice in the United States in regard to (1) treatment of patients with dysentery or other symptoms of amebiasis, (2) treatment of amebiasis during pregnancy, (3) treatment of persons passing cysts but without symptoms or other evidence of ill health and (4) the isolation of patients and disposal of excreta?

R. I. MacDonald, M.D., Toronto, Ont.

ANSWER.—1. The drugs considered to be most useful in the treatment of amebiasis include chiniofon, diodoquin, vioform, carbarsone and emetine hydrochloride. The treatment usually recommended varies, depending on a number of conditions such as the severity of the symptoms, the general condition and age of the patient and previous treatment. In adults with acute amebic dysentery or amebiasis causing severe diarrhea, one course of emetine hydrochloride followed by one or more courses of chiniofon is commonly recommended. Patients with definite but less severe symptoms may be treated with one of the amebicidal drugs other than emetine hydrochloride. Chiniofon or diodoquin is perhaps the most frequently recommended for this purpose.

A course of emetine hydrochloride consists of 0.065 Gm. (1 grain of the drug) given subcutaneously or intramuscularly once a day for seven to ten days. The patient is kept at bed rest throughout the period of emetine administration. A course of chiniofon consists of 1 Gm. of the drug by mouth three to four times daily for eight to ten days, and this is usually repeated after one to two weeks. Additional courses of chiniofon may be given if evidence of amebic infection persists, or courses of diodoquin or carbarsone may be substituted. Modifications of this routine are indicated in certain cases, depending on the response, both therapeutic and toxic. Toxic symptoms due to emetine in adults are uncommon when (1) the patient is at bed rest, (2) the total dose of emetine hydrochloride administered in one course is 0.780 Gm. (12 grains) or less and (3) the course is not repeated before six months. Toxic symptoms due to chiniofon are not serious. Diarrhea or an exacerbation of diarrhea occurs commonly, but this is not severe usually and promptly subsides when the drug is discontinued on completion of the course.

2. One of the iodine-containing amebicidal drugs such as chiniofon or diodoquin is considered the treatment of choice. The use of emetine hydrochloride during pregnancy is discouraged. In fact, it is considered by some to be contraindicated. It is not definitely known that emetine has an unfavorable effect on the fetus or that it favors abortion, but that it might have such an effect seems likely in view of the fact that emetine is a known protoplasmic poison. It would therefore be difficult to justify the use of emetine hydrochloride during pregnancy should an abortion follow, even though the abortion might well have been a spontaneous one. In a pregnant woman seriously ill with amebic dysentery who fails to respond to other drugs, the benefits anticipated from emetine hydrochloride might seem to outweigh the risks sufficiently to warrant its use. Such cases, however, must be rare.

3. Chiniofon, vioform and diodoquin are frequently used in the treatment of asymptomatic amebiasis. Chiniofon may be used in courses as outlined. Vioform 0.25 Gm. taken by mouth three times daily for ten days constitutes one course, which may be repeated after one to two weeks. The recommended dose of diodoquin is two to three tablets of 0.21 Gm. (3⅕ grains) each three times daily for twenty days. Carbarsone also may be used. Although it is less toxic than other amebicidal arsenicals, severe toxic reactions have occurred, and for this reason it is not the drug of choice for the first course of therapy.

4. Hospitalized patients, by law in most states, are isolated and the stools disposed of as in cases of typhoid. On the other hand, most patients with amebiasis are probably ambulatory during treatment. In the latter event the patient is not permitted to engage in occupations involving the handling of food for public consumption. This, of course, does not prevent him from handling food consumed by his family or friends. It then becomes the function of the physician to instruct the patient concerning personal hygienic measures.

Reference:

Craig, C. F., in Portis, S. A.: Diseases of the Digestive System, Philadelphia, Lea & Febiger, 1944.

MANNITOL HEXANITRATE FOR HYPERTENSION

To the Editor:—Please discuss the use of mannitol hexanitrate in the treatment of hypertension.

M.D., Connecticut.

ANSWER.—Mannitol hexanitrate is a useful drug in the management of hypertensive disease. It is a vasodilator belonging chemically to the series of alkyl nitrates, which includes glyceryl trinitrate and erythroltetranitrate, but pharmacologically to the group of nitrites which includes sodium nitrite and amyl nitrite. Mannitol hexanitrate has a more prolonged effect than either of the other two alkyl nitrates; the arterial tone remains reduced for five or six hours.

Continued administration of any or all of the alkyl nitrates leads to increasing tolerance. Tolerance to glyceryl trinitrate is acquired quickly. Abstention from the drug for a few days usually restores responsiveness. Apparently the nitrites act directly on the arteriolar musculature. The nitrite ion is extraordinarily unstable. The normal concentration of nitrite ions in the blood stream is about 1 microgram per hundred cubic centimeters of blood. This is increased to 2 or 3 micrograms by all the alkyl nitrates and by sodium nitrite, amyl nitrite and bismuth subnitrate. However, one peculiarity which remains unexplained is the great variability in effectiveness of the various compounds. Approximately the same degree of fall in arterial tension follows the administration of 1 mg. of glyceryl trinitrate, 40 mg. of erythrol tetranitrate, 50 mg. of sodium nitrite or 100 mg. of amyl nitrite. These differences are not *explained by differences in NO_2 ion content.*

The usefulness of vasodilator drugs in hypertensive disease is limited by several factors. In the later phases of the disorder, when considerable arteriolar sclerosis exists, they are nearly valueless and may be detrimental. In hypertensive states due to arteriolar hypertonicity prior to the sclerotic changes they are most valuable when no active vasopressor influences are operative and the hypertension is largely due to the intrinsic self-perpetuating character of the malady. The degree of arteriolar relaxability of the arterioles in any given case of hypertension may be quickly determined by the amyl nitrite test (Stieglitz, E. J.: Evaluation of the Prognosis in Arterial Hypertension, *Arch. Int. Med.* **46**:227 [Aug.] 1930). The response of the blood pressure to amyl nitrite is an excellent guide to what may be expected from any of the several vasodilators mentioned.

Toxic reactions from the alkyl nitrates are rare, though about 25 per cent of hypertensive patients exhibit poor tolerance and complain of headache for an hour or two after ingestion of these drugs. Sometimes tolerance is acquired by persisting in the treatment despite the cephalalgia but it is wiser to reduce the dosage and then increase it very slowly. The nitrates are distinctly safer and less toxic than potassium thiocyanate.

TRANSMISSION OF BRUCELLA IN MILK

To the Editor:—The county agricultural agents and the veterinarians quote Dr. Huddleson as stating that undulant fever is transmitted only by direct contact with Bang's infected cattle or meat and not by drinking the infected cow's milk. In support of this statement they point to the lack of any cases of undulant fever that cannot be traced to such contacts despite the large consumption of raw milk from these cows. In my epidemiologic investigation of over 20 cases in this area I have found this to be true. However, I am in accord with most physicians who hold a contrary view. Has Brucella abortus been isolated from milk? Have experimental animals contracted the disease after ingesting such milk? Is pasteurized milk with a plate count of 100,000 per cubic centimeter considered as safe as raw milk with a count of 10,000 or less? In other words, is pasteurized milk free from all pathogenic bacteria regardless of the size of the plate count?

M.D., Michigan.

ANSWER.—The veterinarians and county agents are apparently misquoting Dr. Huddleson. In the 1943 edition of Huddleson's "Brucellosis in Man and Animals," pages 71-73, the discussion of ports of entry of Brucella in relation to occupation, varieties of the micro-organism and reported regional experiences is followed by this statement: "In our opinion it seems probable that in general the greater number of human infections are acquired through the ingestion of the organism."

Brucella abortus has been isolated frequently from milk. Several well documented milk borne outbreaks of human brucellosis caused by the porcine variety are illustrative of the nonoccupational mode of transmission to man of the less virulent and epidemiologically less explosive bovine variety (Beattie, C. P., and Rice, R. M.: Undulant Fever Due to Brucella of the Porcine Type, THE JOURNAL, May 19, 1934, p. 1670. Horning, B. G.: Outbreak of Undulant Fever Due to Brucella Suis, *ibid.*, Dec. 14, 1935, p. 1978).

From the point of view of protection against brucellosis, pasteurized milk with a high plate count is safer than any raw milk. Brucella organisms are readily killed by pasteurization.

CONGENITAL MEGACOLON

To the Editor:—What is the expectancy for a patient aged 17 years with a known diagnosis for six years of Hirschsprung's disease? At present the disease is under reasonable control. Also I would appreciate, if available, a suggestion as to the present regimen, surgical and medical, for this syndrome. In my practice it seems that I have seen only 1 instance in patients other than children.
M.D., Michigan.

Answer.—The frequency of congenital megacolon (Hirschsprung's disease) seems to be inversally proportional to the age of an individual. Its most common occurrence is among children, and usually the child has sought medical aid before he reaches the second decade of life. A few, however, have little or no objective complaints except abdominal enlargement and can go on to the middle years of life without much of any trouble. People with advanced megacolon after the age of 40, seemingly in good health, have been encountered. This is exceptional.

The advisability of medical or surgical treatment in these cases will rest largely on the state of advancement of the megacolon. In the mild or moderate cases anticonstipation programs together with the use of drugs affecting the sympathetic and parasympathetic nervous systems have helped. In some of these and the somewhat more advanced cases in children, sympathectomy has been performed with variable results. The treatment of choice seems to be subtotal colectomy.

POSSIBLE SUBACUTE COMBINED DEGENERATION

To the Editor:—A diagnosis of subacute combined sclerosis was established one year ago in a man aged 68 on the basis of a history of tingling and numbness in the hands, neurologic findings, a low red cell count not typical of pernicious anemia, and an achlorhydria. He was given liver extract, reticulogen 1 cc. weekly, diluted hydrochloric acid twenty drops with meals, and a vitamin B complex capsule. On this therapy he improved. At the present time, however, he complains of generalized weakness and loss of strength. The patient weighs 129 pounds (58.5 Kg., no change in several years), his height is 5 feet 7 inches (170 cm.), he appears healthy, his tongue is pale and smooth with tortuous venules on the under surface and petechial-like spotting of the mucous membrane, there is a systolic heart murmur, the blood pressure is 160/90, the liver edge is palpable two fingerbreadths below the costal margin and not tender, there is a loss of biceps, triceps, patellar and achilles tendon reflexes, the abdominal reflexes are questionable, the cremasteric reflexes are active, there is atrophy of the small muscles of both hands, fibrillary twitching has existed in the hands for three years, vibratory sense is reduced, heat, pain and touch sensation is normal, the patient is unable to distinguish small objects placed in the hands, he experiences difficulty in executing the finer movements of the hands, there is loss of position sense of the toes and he has a tendency to drag the left foot in walking. Laboratory examination reveals the urine normal, creatinine excretion 0.978 Gm. in twenty-four hours, erythrocytes 4,750,000 (same counts since 1940), hemoglobin 90 Gm. per hundred cubic centimeters (Sahli), color index 0.92, reticulocytes 0, megaloblasts 0, leukocytes 9,100, of which polymorphonuclears were 62 per cent, stabs 4 per cent, lymphocytes 32 per cent, monocytes 3 per cent and eosinophils 3 per cent, sedimentation rate (Wintrobe) 0, Price-Jones curve single peak average 7.3 microns. Marrow studies were not made. Blood and spinal fluid serologic reactions for syphilis were negative, spinal fluid Pandy test was negative, colloidal gold curve was 2233221111. Diagnoses of atypical pernicious anemia and progressive muscular atrophy have been considered. Evidence against syphilis includes lack of history or scar of primary lesion, normal pupils and negative serologic tests. Please discuss the diagnosis and treatment. Is the increased tortuosity of the venules on the under surface of the tongue common? Does folic acid influence neurologic changes in typical pernicious anemia?
M.D., California.

Answer.—The neurologic findings of the patient described in the query are not typical of the subacute combined degeneration associated with pernicious anemia. Against this diagnosis are the weakness of one foot, the loss of the biceps and triceps reflexes, the presence of astereognosis and the abnormal colloidal gold curve. Atrophy of the small muscles of the hand and fibrillary twitching are not unusual in old age in the absence of neurologic disease. A definite neurologic diagnosis cannot be made from the findings described.

Achlorhydria is not diagnostic, as this occurs in more than 20 per cent of persons in this age group. Tortuosity of the venules under the tongue is common and has no relation to pernicious anemia.

It is stated that the red cell count was low one year before. A rapid response of the count to parenteral treatment with liver would favor the diagnosis of pernicious anemia. Knowledge of the course of neurologic symptoms and signs during liver therapy would also be helpful. In pernicious anemia the neural symptoms would either improve or remain stationary; they should not progress. As this diagnosis cannot be excluded, parenteral liver therapy should be continued. Fifteen units every two weeks should be adequate.

Preliminary observations indicate that the neurologic changes in some cases of pernicious anemia are not controlled by folic acid.

REMOVAL OF CALCIUM

To the Editor:—Is there any method to reduce the calcium content of the body?
Charles C. Morrison, M.D., Bar Harbor, Maine.

Answer.—It is presumed that the inquiry refers to a reduction in the calcium content of body fluids. A second possibility would be the reduction of the calcium content of soft tissues that have become calcified.

Hypercalcemia most commonly results from the ingestion of large amounts of vitamin D, from hyperparathyroidism, from the rapid destruction of bone as by a lytic bone tumor, or from the immobilization of a part of the skeleton. In the first instance, stopping the ingestion of the hypercalcemic sterol, placing the patient on a diet low in calcium and maintaining a high water intake will lead to a decrease in serum calcium. This decrease may be rapid and striking if the patient has been on a high calcium intake, as is frequently the case. In hyperparathyroidism, reducing the intake of calcium may cause a slight reduction in serum calcium although no decided effect will result unless the hyperfunctioning tissue is removed. The administration of soluble phosphates has been suggested as a means of lowering the serum calcium in hypercalcemia. This procedure seems unwise, as it may contribute to metastatic calcification and the impairment of kidney function. A return of weight bearing to the formerly immobilized part of the skeleton will result in a return of the serum calcium to normal.

Reducing the calcium content of soft tissues is frequently impossible if the deposits occur in the presence of a normal calcium content of the body fluids. If the calcification of soft tissue occurs in the presence of hypercalcemia, spontaneous mobilization of the soft tissue deposits is likely to occur when the underlying cause of the hypercalcemia has been removed (Freeman, Rhoads and Yeager: Toxic Manifestations Associated with Prolonged Ertron Ingestion, The Journal, Jan. 26, 1946, p. 197. Danowski, Winkler and Peters: *Ann. Int. Med.* **23**:22 [July] 1945). Parathyroid, citrates and various acidifying salts such as ammonium chloride will mobilize calcium from the skeleton, but their effect is on the skeleton as a whole without regard to any particular locality. These measures would have little if any effect on deposits of calcium in the soft tissues.

Theoretically it should be possible to hasten the rate of reduction of an elevated serum calcium by the oral administration of unabsorbable substances that would combine with the calcium of food and with the calcium contained in the gastrointestinal secretions. Actually, no substance suitable for this purpose has yet been demonstrated.

RECURRENT ERYSIPELAS

To the Editor:—A patient aged 56 years has had erysipelas eight times in the last two years. The attacks occur on either the left or the right lower part of the leg. The acute stage responds readily to the sulfonamides and to penicillin. What can I do to prevent the frequent recurrences?
Harry Grodzicker, M.D., Brooklyn.

Answer.—Since erysipelas is a disease of the skin and mucous membranes due to hemolytic streptococci, it is assumed that in the case cited this micro-organism has been identified as the etiologic agent. If not, attempts should be made to isolate the organisms from the tissues or blood during an acute attack. There are two possibilities to explain the recurrent attacks. Repeated episodes of erysipelas have been explained on the basis of an allergic reaction, that is, the presence of tissue which is hypersensitive to a product or products of the hemolytic streptococcus. During the acute attack the inflamed tissues usually do not contain viable organisms, but the causative factor is some distant focus or foci harboring hemolytic streptocicci. Therefore, in the case under discussion it would be well to search for a focus such as a chronic sinusitis. Eradication of the primary focus is essential for the prevention of recurrent attacks, and this may necessitate surgical intervention. Desensitization with the hemolytic streptococcus, using either a vaccine or exotoxin prepared from the organisms, has been unsuccessful. A second possibility for explaining the genesis of the attacks is the presence of chronic lymphedema of the legs with localizing of micro-organisms in the tissues. The edema may be associated with varicose veins, chronic congestive heart failure, obesity and, finally, thrombophlebitis. Congestion of the legs associated with inflammation and infection leads to more fibrosis of the tissues and an increase in the lymphedema. Such a sequence of events is probably present in filariasis, where it is known that hemolytic streptococci may localize in the tissues of the legs. In the case under discussion, recurrent attacks of thrombophlebitis should be seriously considered. If this is the cause of the repeated attacks, treatment may require surgical ligation of the veins; or anticoagulant therapy with heparin, the administration of penicillin and vasodilation with local heat over a period of three to four weeks may be utilized.

DOSAGE SCHEDULE FOR QUINIDINE

To the Editor:—What is the excretion rate of quinidine sulfate when employed in the usual dosage of 100 to 200 mg? It is my impression that the drug when so given (orally) is completely excreted within two to three hours, so that, in order to effect control of cardiac arrhythmia, a less frequent administration would be much less effective. The question is prompted by the prevailing custom, at my hospital, of ordering administration every four hours or three times a day. M.D., New York.

ANSWER.—The question of the optimal frequency of administration of quinidine has occasioned considerable discussion. Electrocardiographic studies during quinidine administration have thrown considerable light on the problem. Such studies indicate that the maximal effect of a single oral dose is obtained from one and one-half to three hours after administration and is maintained at a slightly lower degree for three to five hours following, which it decreases rather rapidly. Subsequent doses lead to a summation of effects; hence, if too large doses are given at too frequent intervals, cumulative poisoning may develop. These findings would indicate that in acute conditions the drug should be administered at one to two hour intervals until the maximal effect is developed. For chronic auricular fibrillation and in the prophylactic treatment of paroxysmal arrhythmias, the conventional four hour schedule should be adequate. The average dose is usually considered to be 200 to 400 mg. rather than 100 to 200 mg.

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Sagall, E. L.; Horn, C. D., and Riseman, J. E. F.: Studies on the Action of Quinidine in Man: Measurement of the Speed and Duration of the Effect Following Oral and Intramuscular Administration, *Arch. Int. Med.* **71:** 460 (April) 1943.

PROGRESSIVE BULBAR PALSY

To the Editor:—What, if any, specific therapy is there for the treatment of progressive bulbar palsy? Sidney A. Chait, M.D., Torrington, Conn.

ANSWER.—Progressive bulbar palsy is a rare disease in which the anterior horn cells of the bulb have degenerated. Death usually results in a period of six months to five years—mostly after two years. There is no known efficacious treatment. Rarely one sees a case that has all the manifestations of progressive bulbar palsy in which there occurs a period of arrest and the patient recovers. Every patient should have the benefit of the following treatment: 150 mg. of thiamine hydrochloride hypodermically three times a week for five weeks, 25 minims (1.5 cc.) of whole wheat germ oil three times daily for four weeks, atropine sulfate $\frac{1}{120}$ grain (0.54 mg.) for sialorrhea and a diet consisting of 50 per cent liquids of high caloric value.

NICOTINIC ACID FOR HEADACHE

To the Editor:—Please give the detailed technic of the intravenous injection of niacin for headache. S. Joe McKinsey, M.D., McAllen, Texas.

ANSWER.—Technics differ in the intravenous administration of niacin for headache. Atkinson, in the treatment of migraine, prescribes a course of injections followed by oral maintenance dosage, while Goldzieher and Popkin, in treating various types of headache, recommed the administration of 100 mg. of nicotinic acid or its equivalent as the sodium salt at the outset of each attack. The method recommended by Atkinson is as follows: First give an intramuscular injection of 25 to 35 mg. of nicotinic acid to determine by the extent of the flush reaction the individual tolerance of the patient. (It should be stated that many workers regard the flush reaction as valueless.) Estimating dosage from this reaction, Atkinson gives a series of six or eight intravenous injections, starting with 20 to 30 mg. and raising the dosage by daily increments of 5 mg. to a level of 50 mg. or such lower limit of tolerance as may supervene. After this course of intravenous injections the patient is taught to give himself intramuscular injections of 25 to 50 mg. at daily or thrice weekly intervals as indicated by symptoms or experience. At the same time tablets (50 to 150 mg. a day) are taken. Depending on the response to treatment, the patient is ". . . weaned from injections and kept on a maintenance dose by mouth."

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ANTIHEMOPHILIC GLOBULIN

To the Editor:—A man aged 22 with hemophilia urgently needs a kidney operation. Is there a new antihemophiliac blood substance which will offer safety in surgery for such patients? What is the name of the product and is it available commercially?

D. D. McRoberts, M.D., Lewiston, Idaho.

ANSWER.—The substance referred to in the query has been isolated from normal blood plasma by workers at the Thorndike Memorial Laboratory of the Boston City Hospital (Lewis and others: *Blood* **1:** 166 [March] 1946). They term this substance "antihemophilic globulin." Single injections of 200 to 400 mg. will reduce the coagulation time of hemophiliac patients to low levels for eight to twelve hours. This work is in the experimental stage, and the material is not available commercially.

For the patient mentioned in the query, 125 to 250 cc. of whole blood or an equivalent amount of fresh plasma should reduce the coagulation time of the blood to almost normal for one to two days. Further blood or plasma may be given as indicated. For local hemostasis, a purified thrombin preparation or fibrin foam may be useful.

ERGONOVINE AND POSTERIOR PITUITARY INJECTION

To the Editor:—After delivery is it compatible to give ergotrate (ergonovine) and pituitrin (posterior pituitary injection) together in the same syringe or should these be given separately?

William F. Chamlee, M.D., Hanford, Calif.

ANSWER.—It is not advisable nor indicated therapeutically to administer ergonovine and posterior pituitary injection in the same syringe. When administered intramuscularly they both exhibit their action in six or seven minutes. Intravenously they take effect almost immediately, in thirty or forty seconds. The action of ergonovine lasts two to four hours, of posterior pituitary injection several minutes. Qualitative differences in the uterine motility are not induced by the two drugs administered intravenously. Therefore it is not necessary to use posterior pituitary injection if ergonovine is administered. In many thousands of patients in a large maternity hospital, ergonovine has proved to be the ideal oxytocic drug because of its uniform effectiveness and the complete absence of any undesirable symptoms.

RESTORATION OF DESTROYED NAIL BED

To the Editor:—Eighteen months ago a 28 year old man tore the right thumb nail about three quarters off. The nail has never grown fast to the anterior three quarters of the nail bed which I believe is replaced by scar tissue. I have considered removing most of the nail, scarifying and then making fairly wide linear incisions through the healthy nail bed forward to the end of the thumb in the hope that this may correct the defect. D. Guilford Dudley, M.D., Endicott, N. Y.

ANSWER.—It is probable that the nail bed was partially destroyed at the time of the original injury. Unfortunately no way is known of securing satisfactory restoration of a destroyed nail bed.

One cannot say dogmatically that the procedure suggested will fail, but there is no logical reason for believing that incisions through the scar will have any helpful effect.

DURATION OF SCROTAL HERNIA

To the Editor:—I have the problem of determining whether an indirect left scrotal hernia was acquired within a period of four months or prior to this period. Is there a method of determining the length of existence of this type of hernia? Angelo J. Gulino, M.D., Plainfield, Conn.

ANSWER.—An accurate method of determining, within a few days or a few weeks, the length of time an indirect scrotal hernia has been present has not been found, although at times the duration may be approximated with a fair degree of accuracy. One of the difficulties lies in the well known fact that some cases of indirect hernia are congenital in origin and may exist as a narrow peritoneal sac with a small neck in the inguinal canal or even in the scrotum for a long time before becoming manifest clinically as a bulging mass in the groin which is accentuated by coughing or straining and is reducible when lying down. This may develop so gradually and be accompanied by so little discomfort that the patient is scarcely conscious of its presence; or it may come on suddenly after a strain or heavy lifting and produce such severe pain that the exact date of its occurrence is easily remembered. In such an event it is fairly easy to determine the duration of the actual herniation. Fairly good evidence also may be gathered at the time of operation, because a thin walled sac might indicate a hernia of recent development, whereas if the sac is a large one and has thick walls and within its lumen one finds adherent omentum or adherent bowel it would speak strongly for a process of much longer duration.

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THE MANAGEMENT OF JAUNDICED PATIENTS

Consideration of the Indications for Surgical Treatment

ALBERT M. SNELL, M.D.
Rochester, Minn.

Friedrich Theodor Frerichs,[1] whose "Clinical treatise on diseases of the liver" is one of the neglected classics of medicine, began his discussion of the management of jaundiced patients with the sentence: "In the treatment of jaundice the first point to be considered is the causes which have led to the accumulation of bilious matter in the blood." There is no panacea for jaundice and the first problem is, as it was in the time of Frerichs, that of ascertaining the pathologic mechanisms involved in the particular case.

While many excellent classifications of jaundice have been advanced, one which represents an oversimplification of the problem is best suited as an approach to the subject of therapeutics. It is that of McNee,[2] who regarded jaundice as hemolytic, hepatocellular or obstructive. The hemolytic varieties may be recognized by appropriate studies of the blood and of the products of breakdown of hemoglobin. Evidence of serious hepatic dysfunction is usually absent. For these reasons, such cases seldom present a major problem in differential diagnosis. The obstructive types may be identified by the signs and symptoms of interference with biliary flow, such as colic, intermittent or permanent acholia and retention in the blood of biliary constituents other than bilirubin. Considered in the mass, obstructive jaundice seldom presents serious evidence of disturbed hepatic function unless it is of long duration. Hepatocellular jaundice does not present, as a rule, any evidence of interference with biliary flow into the intestine, and, in contrast to the aforementioned types, it shows early and conclusive evidence of interference with the metabolic and other functions of the liver. It is on these diagnostic premises that a differentiation sufficient for therapeutic purposes may be made.

The most troublesome diagnostic problem is presented by the patient whose jaundice was initiated without severe pain. It is of particular importance to concentrate attention on this type of case today because of the worldwide dissemination of infectious hepatitis which has occurred during World War II, the frequently reported incidence of homologous serum jaundice subsequent to the use of blood and plasma and the apparently increased frequency of portal cirrhosis. These are distinctly medical disorders in which surgical treatment has no place, but unfortunately they may be confused clinically with the painless, obstructive variety of icterus due to tumors of the papilla of Vater and head of the pancreas, to the treatment of which the Whipple operation has been applied with such encouraging results.

A great many diagnostic short cuts have been suggested for the differentiation of obstructive and hepatocellular jaundice, most of which are based on the previously mentioned fact that gross disturbances of hepatic function occur early in the course of primary hepatic disease and late when there is obstruction of the extrahepatic biliary passages. The hepatic functional tests commonly used in this differentiation appear in the accompanying table. They constitute part of the "profile" study suggested by Watson and his associates[3] and, if used with an understanding of their limitations, are clinically valuable. However, any one whose experience with jaundiced patients has been at all extensive can recall many cases of both obstructive and intrahepatic jaundice in which the observations were at considerable variance with this table. One rather cynical observer has remarked that the greatest value of hepatic functional studies lies in the fact that the time required for their performance gives one the opportunity to take a complete history and to examine the patient. Perhaps it would be fairer to say that the tests are as good as the clinical abilities of the user.

In the doubtful case of painless obstructive jaundice the proof is in the demonstration of actual biliary obstruction. Of considerably more clinical importance, therefore, is the remaining portion of the "profile" series of tests, which include studies on urinary and fecal urobilinogen.[4] Data from these studies give reliable information in regard to the patency of biliary passages and, incidentally, will detect the presence of excessive hemolysis. Formerly clinicians depended to a considerable extent on the chemical analysis of the stools for bile pigment and on the use of duodenal intubation in the diagnosis of obstruction of the biliary passages. Positive results from these sources are reliable, but negative information is considerably less so. A bulky stool with a low bilirubin content will give a negative Schmidt test, and a negative result of examination of the duodenal contents for bile may be due to technical error in the location of the tube.

From the Division of Medicine, Mayo Clinic.

Read in a Symposium on "Treatment" before the Section on Experimental Medicine and Therapeutics at the Ninety-Fifth Annual Session of the American Medical Association, San Francisco, July 4, 1946.

[1] Frerichs, F. T.: A Clinical Treatise on Diseases of the Liver, translated by C. Murchison, New York, William Wood & Company, 1879.

[2] McNee, J. W.: Jaundice: A Review of Recent Work, Quart. J. Med. **16**: 390-420 (July) 1923.

[3] Hoffbauer, F. W.; Evans, G. T., and Watson, C. J.: Cirrhosis of the Liver: with Particular Reference to Correlation of Composite Liver Function Studies with Liver Biopsy, M. Clin. North America **29**: 363-388 (March) 1945.

[4] Watson, C. J.: Studies of Urobilinogen: III. The Per Diem Excretion of Urobilinogen in the *Common Forms* of Jaundice and Disease of the Liver, Arch. Int. Med. **59**: 206-231 (Feb.) 1937.

Stokes,[5] who is now studying the reliability of all methods for determining the existence of biliary obstruction, has permitted me to mention some of his preliminary studies. When no bile was obtained by duodenal drainage in his patients, the position of the tube was checked roentgenologically. In 78 per cent of cases the tube was found to be in the stomach rather than in the duodenum. Even when duodenal drainage did not produce bile, determinations of urobilinogen in the stools showed values above the range of complete obstruction in 53 per cent of the cases studied by him. In 5 instances in which there was absence of bile in the duodenum on drainage and roentgenologic examination showed the tube to be in the duodenum, the urobilinogen in the stool was above the range of malignant obstruction and, in fact, within the normal range in 4 of the 5 cases. In no instance was duodenal drainage positive for bile when the urobilinogen in the stool was in the range of complete obstruction.

These observations indicate clearly that the only physiologically satisfactory proof of complete biliary obstruction (which is, of course, the rule in occlusion of the biliary passages by malignant lesions) lies in the demonstration of exceedingly low levels of fecal and urinary urobilinogen. While such studies are tedious they seem definitely in order when one is considering a procedure of such magnitude as the Whipple operation for pancreatic cancer.

Results of Hepatic Functional Tests in Obstructive Jaundice and in Hepatocellular Jaundice

Test	Type of Jaundice	
	Obstructive	Hepatocellular
Plasma cholesterol	Elevated	Normal or low
Alkaline phosphatase	Increased	Normal
Serum protein	Normal	Reduced; reversed albumin-globulin ratio
Thymol turbidity	Negative	Positive
Cephalin-cholesterol flocculation test	Negative	Positive
Excretion of hippuric acid	Normal	Decreased
Effect of vitamin K on prothrombin time	Prompt	Delayed or absent

One may, then, recommend as necessary for diagnosis the battery of functional tests which constitute the "profile" series of Watson. They are not intended to substitute for clinical judgment, but their use definitely extends the range of diagnostic accuracy in the doubtful case; as a supplement to careful clinical study they leave little margin for error. In addition to their usefulness in the detection of complete biliary obstruction and hemolytic icterus they may give one assurance in advising an exploratory operation when there is equivocal clinical evidence of primary hepatic disease in patients suspected of having stone in the common duct.

SURGICAL INDICATIONS

Comments on surgical indications by one whose primary interest lies in the field of medicine may at first glance seem impertinent. These are offered only as opinions, which may well be challenged. Surgeons have at times been swayed by Moynihan's[6] dictum of an earlier epoch, that "no man living is infallible in the diagnosis of jaundice." They have accordingly been inclined to explore the biliary passages under circumstances which give little hope of benefit and which entail considerable risk. The surgeon can effect a cure only if there is mechanical interference with the extrahepatic flow of bile; no amount of external biliary drainage can reasonably be expected to improve hepatocellular damage. The surgical consultant ought, therefore, to insist on reasonable proof of mechanical biliary obstruction, partial, intermittent or complete, before undertaking the task of exploring the biliary passages of a jaundiced patient. Such proof depends not only on the presence of such familiar signs and symptoms as colic, a distended gallbladder, an external biliary fistula or complete acholia but on the assurance that any evidence of diminished hepatic function is minimal or at least consistent with the duration of the patient's jaundice. Hence, what I consider to be the indications for surgical treatment and the relative contraindications against it will be considered separately.

The following circumstances in connection with the presence of jaundice are considered to warrant surgical exploration of the biliary passages.

1. *A Reliable Past History of Gallstones or Colic or Both.*—The fact that the biliary passages have once been shown to contain stones is of the greatest significance. The patient whose former cholecystogram has shown multiple stones has a 13 to 20 per cent chance of having calculi in the duct also; with simple cholesterol stones or a roentgenologic diagnosis of a nonfunctioning gallbladder the probability of stones in the duct is considerably less. One should always recall that in spite of many warnings by surgical authorities the common bile duct is not explored as thoroughly or as often as it should be. Even if the ducts are free of calculi, inflammation or edema involving the gallbladder, ducts or pancreas may produce temporary jaundice in patients who have calculous cholecystitis. Hence, a previously positive cholecystogram or a history of removal of a stone-filled gallbladder, may be of great value in arriving at a decision.

It should be emphasized that jaundice due to stone may not be associated with colic; it may be unusual in its chronologic relation to the appearance of jaundice; pain, too, may be absent or atypical in character and location. If the gallbladder has previously been removed, the onset of icterus is more frequently associated with typical colicky seizures.

The story of colic in such cases should be carefully appraised and most conservatively interpreted; and one should not neglect to obtain firsthand information in regard to previous surgical treatment and roentgenologic studies. Above all, one need not under these circumstances be deterred from exploration by the absence or the atypical character of pain.

2. *Proved Intermittent Biliary Obstruction with Fever.*—Exploration in cases of proved intermittent biliary obstruction with fever is aimed primarily at the silent ball-valve stone, the symptomatology of which was so well described by Osler.[7] The rare benign tumors of bile ducts may produce a similar clinical syndrome; the same may be said of the equally uncommon primary stricture of the duct and of the more frequently encountered late postoperative stricture with incomplete obstruction of the duct. Chronic relapsing pancreatitis is another diagnostic stumbling block.

The principal diagnostic point in such cases is to be sure of one's facts, and it is expected that reasonable proof of intermittent acholia and of a "spiking" curve of serum bilirubin should be available. The greatest danger lies in the fact that patients who have chronic hepatitis, hepatic atrophy or cholangitis also may have intermittent icterus and fever. So far as possible, primary hepatic disease should, therefore, be excluded. If the liver is large, a needle biopsy may be a worth while preliminary procedure.

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[5] Stokes, J. H.: Personal communication to the author.

[6] Moynihan, cited by McLaughlin, C. W., Jr.: Tumours of the Extra-Hepatic Bile Ducts, Exclusive of the Ampulla of Vater, Canad. M. A. J. **28**: 255-265 (March) 1933.

[7] Osler, W.: A Clinical Lecture on the Ball-Valve Gall-Stone in the Common Duct, Lancet **1**: 1319-1323 (May 15) 1897.

3. *An Associated Biliary Fistula With or Without Acholic Stools.*—The need for exploration in a case in which there is an associated biliary fistula with or without acholic stools requires no discussion; the great majority of cases are due either to postoperative stricture or to an overlooked stone in the common duct. The fistula may occasionally communicate with a subhepatic extra-ductal pocket of retained bile.

4. *Painless Jaundice Appearing Within Six Months After Cholecystectomy.*—As is generally known, in the majority of cases in which painless jaundice appears within sixty days after cholecystectomy it is due to traumatic stricture or even to accidental section of the common bile duct at operative intervention. Care must be taken to exclude homologous serum jaundice with its long incubation period of sixty to one hundred and twenty days. A negative Hanger test or the absence of thymol turbidity should give the surgeon assurance on this latter point.

5. *Proved Complete and Permanent Biliary Obstruction.*—The completeness of mechanical blockage of the bile duct due to carcinoma of the pancreas, papilla or common duct has been repeatedly emphasized. It is in this type of case that radical resection of the obstructing lesion has been performed with such gratifying results. The prime consideration here is the proof of complete occlusion, with permanent absence of bile in the stool. The corroborative value of determinations of urobilinogen in stool and urine has already been mentioned. Palpation of the distended gallbladder, now almost a lost art, is also of great diagnostic value. Both the surgeon and the patient should be prepared for a most extensive and dangerous surgical procedure. One can, as has been said, "settle for a cholecystogastrostomy," but in these times radical resection is the ultimate goal.

It is realized that these indications for exploration are conservative and that the surgeon may frequently and properly decide to proceed with operative intervention on much less definite grounds. He may, for example, be quite justified in exploring the ducts of a patient with chronic jaundice who shows minimal evidence of hepatic dysfunction, and he may be rewarded by finding a surgically removable lesion, such as stone. Whether the indications are clear or not, it is believed that the relative contraindications against surgical intervention should always be given consideration in making a decision. As will appear later, these danger signals are associated either with the presence of primary hepatocellular disease or with serious hepatic damage secondary to prolonged biliary obstruction. They may not necessarily interdict exploration, but they are always worthy of review in any given case.

RELATIVE CONTRAINDICATIONS TO SURGICAL TREATMENT OF JAUNDICED PATIENTS

1. *A Recent History of Exposure to Hepatotoxic Agents.*—A routine inquiry in regard to a recent exposure to hepatotoxic agents should be made in all cases of jaundice. It is well to recall that many patients having "toxic" hepatic injury may have abdominal pain and digestive disturbances at the onset. In these times the diagnostic possibility of epidemic infective hepatitis must also be considered. In such cases, the onset of symptoms is frequently characterized by fever and abdominal pain, and in more than one case the symptoms have been tentatively regarded as being due to calculous obstruction.

2. *Transfusions or Plasma Infusions Sixty to One Hundred Days Previously.*—The danger of confusing homologous serum jaundice due to transfusions or plasma infusions sixty to one hundred days previously with that due to other causes cannot be overemphasized, since the former condition has a significant mortality rate, much of which occurs during the first week or ten days after the appearance of jaundice. Some time should be allowed to elapse before a final decision is reached in the doubtful case.

3. *Vascular "Spiders"; Visible Collateral Circulation.*—Pulsating angiomas which appear in the distribution of the superior vena cava are almost the trademark of primary hepatic disease. They occur but seldom in patients with stricture. Visible distention of the abdominal veins has a similar significance, as it indicates interference with portal blood flow.

4. *Fetor Hepaticus.*—The peculiar odor of the breath associated with hepatic insufficiency does not lend itself well to descriptive terms. It has been described as sweetish, mousy or resembling the odor of certain aromatic amines. It is especially likely to occur in the later stages of hepatic atrophy or cirrhosis and can never be safely disregarded.

5. *Edema or Pronounced Hypoproteinemia or Both.*—These findings are rare in cases of obstructive jaundice and the presence of edema or pronounced hypoproteinemia or both should always serve as a warning to the surgeon who is considering exploration.

6. *Extrahepatic Tumor Masses.*—Masses in the right upper quadrant of the abdomen projecting from the inferior surface of the liver may be due to primary carcinoma of the gallbladder or they may be due to malignant lesions of the stomach or splenic flexure, with or without hepatic metastasis. In case of doubt, appropriate roentgenologic studies and visualization of the liver by the aid of thorium dioxide sol should be carried out. The latter procedure has a special field of usefulness if metastasis or primary hepatic cancer is suspected.

7. *Decidedly Chronic Jaundice with Splenomegaly.*—Patients presenting the syndrome of decidedly chronic jaundice with splenomegaly are usually suffering from what has been described as hypertrophic or pericholangiotic biliary cirrhosis. A few may present associated lipemia and xanthomas. Many show little evidence of interference with hepatic function even after long periods. As a group, these patients are seldom benefited by any surgical procedure.

8. *Intense Jaundice with Patent Biliary Passages.*—Patients whose bilirubin levels are in excess of 25 mg. per hundred cubic centimeters of serum are most frequently afflicted with primary hepatic disease (infectious hepatitis, atrophy or cirrhosis), primary carcinoma of the liver or extensive necrosis of the hepatic parenchyma secondary to biliary obstruction.[8] Even when there is good reason to believe that the biliary passages may have been previously occluded, the surgeon should proceed with great caution and consider the results of hepatic functional studies with unusual care.

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[8] Snell, A. M.: Hepatic Parenchymal Lesions and Hepatic Function of Patients with Obstructive Jaundice, Tr. Am. Gastro-Enterol. A. 35: 196-225, 1932.

9. *Evidence of Active Hemolysis.*—It is rare for either hemolytic anemia or jaundice to simulate an obstructive lesion of the biliary passages, but it should be recalled that the association of gallstones and congenital hemolytic jaundice is a common one and that occasionally patients who have cirrhosis may also present evidence of hemolytic phenomena.

10. *Greatly Reduced Cholesterol Esters or Failure of Hippuric Acid Synthesis.*—A low or falling blood cholesterol level and a diminution of the cholesterol esters to less than 50 mg. per hundred cubic centimeters of plasma are indicative of severe parenchymal hepatic injury. Hippuric acid excretion of less than 50 per cent of normal has a similar significance and indicates an increased surgical risk.

11. *Hypoprothrombinemia Refractory to Vitamin K.*—No matter how complete or prolonged mechanical obstruction to the biliary passages may be, the prothrombin deficit which results is almost invariably responsive to the oral or parenteral administration of vitamin K. In primary hepatic disease the prothrombin deficit may not be as great, but it is usually completely refractory to treatment. The effects of vitamin K therapy may, therefore, be of diagnostic value[9] and are at times sufficient to establish the diagnosis of primary hepatocellular injury, as has been mentioned in the table.

As has been said previously, these contraindications are purely relative and may on occasion be disregarded. In general, however, the presence of one or several of them in the individual case should discourage any hasty surgical intervention.

It is regrettable that no specific precautions can be taken against one of the most unfortunate happenings in the field of biliary surgery; namely, exploration performed on patients with "compensated" cirrhosis. For reasons which are as yet unknown, these patients may present themselves with biliary colic, jaundice and other features of the syndrome of stone in the common duct. The mechanism of the pain and jaundice in such cases is obscure, but the signs and symptoms may be such that even the most experienced surgeons are misled. A high index of suspicion and a search for other signs of cirrhosis are about the only available safeguards.

DIETETIC AND OTHER TREATMENT OF JAUNDICED PATIENTS

Dietetic Considerations.—A consideration of the physiologic aspects of experimentally produced hepatic injury and of the principles on which current conceptions of treatment are based is beyond the scope of this paper. The protective value of a high carbohydrate intake is too well known to require discussion here; the need for an adequate protein intake is not so generally appreciated. The fear of using protein in the diet dates back to the early studies on dogs that had Eck fistulas and the experiments of Bollman[10] on the influence of meat extractives in producing ascites. It suffices to say that these studies do not necessarily apply to the clinical field. The interdiction of fat is based on the known need for bile in the intestine to facilitate its digestion and absorption, as well as on the observed vulnerability of experimental animals maintained on high fat diets to hepatotoxins. However, a low fat diet is an unpalatable affair at best, and the tendency for the past ten years has been toward liberality in this respect. The recent report of Rivers and Hoagland[11] indicates that, even in severe infectious hepatitis, a relatively high fat intake is without harmful effect. In fact, these workers noted that recovery of weight and strength is more rapid when such diets are used.

The clinical use of choline, methionine and similar lipotropic agents is based on studies of animals maintained on deficient diets. The application of these observations to the human subject is still under investigation. Clinical results have not so far been particularly encouraging. It may be that methionine may be found to have a specific field of usefulness as a "detoxicating" agent under certain conditions, and the drug also may spare endogenous lipotropic compounds.

The requirements for specific vitamins in the presence of jaundice are not known, except in the case of vitamin K. However, the clinical picture of hepatic insufficiency presents many of the aspects of a deficiency state, which in turn may be due to inadequate absorption of vitamins, to failure of their normal metabolism or to their actual destruction in the body of the affected person. It is on this rather insecure basis that the case for vitamin therapy rests.

The Treatment of Patients Who Have Obstructive Jaundice.—Management of patients with obstructive jaundice must be highly individualized. Many patients who show minimal disturbance of hepatic function require little or no special care, while others who have been jaundiced for a long period may have sustained serious hepatic injury, which will tax one's therapeutic resources. The diet should contain at least 350 Gm. of carbohydrate and 150 Gm. of protein daily; the intake of fat may be liberalized if it is tolerated by the patient. It is rather unusual to find a patient who cannot take at least 100 Gm. of fat a day. Dextrose need not be given intravenously except when the patient is vomiting or unable to eat. The advisability of its use during the immediate preoperative and postoperative period is, however, well established.[12] The intravenous use of protein hydrolysates is believed to be unnecessary except when the patient is malnourished. Transfusions need be used only as necessary to maintain a normal level of hemoglobin. Vitamin K should be given intravenously in dextrose solutions just before operative intervention or orally, together with bile salts to insure its absorption, for a few days before the operation, and its administration should be continued during the postoperative period to compensate for the fall in prothrombin which usually occurs. Other vitamin therapy should be given only on the basis of specific indications.

Postoperative care should include fluid administered parenterally (chiefly in the form of dextrose solutions) in sufficient quantities to maintain a positive fluid balance and a normal output of urine. In this connection it is well to follow the blood protein-nonprotein nitrogen level. If it is found to be elevated, the parenteral intake of fluid should obviously be increased, since renal insufficiency is still a common postoperative development. In occasional patients, especially those with stricture and long-standing jaundice, transfusions, plasma or serum albumin will be required to maintain the level of hemoglobin and plasma proteins during the postoperative state. A high carbohydrate, high protein diet of the type described previously, with vitamin supplements as needed, should be ordered for the convalescent patient, and every effort should be made to induce the patient to eat. In fact, an adequate diet before and after surgical operation is the only special care which many patients who have obstructive jaundice require.

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[9] Lord, J. W., Jr., and Andrus, W. DeW.: Differentiation of Intrahepatic and Extrahepatic Jaundice: Response of the Plasma Prothrombin to Intramuscular Injection of Menadione (2-Methyl-1,4-Naphthoquinone) as a Diagnostic Aid, Arch. Int. Med. **68**: 199-210 (Aug.) 1941.

[10] Bollman, J. L.: The Influence of Diet on the Production of Ascites, Arch. Path. **6**: 162-163 (July) 1928.

[11] Rivers, T. R., and Hoagland, C. L.: Therapy of Infectious Hepatitis, Tr. A. Am. Physicians, to be published.

[12] Jones, C. M.: The Treatment of Acute Hepatic Insufficiency and Its Relation to Prognosis, Am. J. Digest. Dis. **3**: 624-628 (Nov.) 1936.

Treatment in the Primary Hepatocellular Forms of Jaundice.—The management of the primary hepatocellular forms of jaundice has been gradually altered since the publication of Patek's[13] reports ten years ago and is now directed chiefly at the maintenance of an optimal nutritional state, with specific treatment for such deficiencies of vitamins and protein as may occur. The diet should contain 350 to 500 Gm. of carbohydrate, 100 to 150 Gm. of protein and 100 to 150 Gm. of fat. It is the usual practice to plan the diet with the idea of deriving a considerable portion of fat and protein from vegetable sources, eggs, dairy products, beef and liver. The diet may be liberalized considerably to suit the tastes of the person concerned. The major problem is not to prescribe a diet of particular composition but to insure the ingestion of a maximal amount of nutritious food. Since many of these patients have no desire to eat and even a profound disinclination to do so, the task of feeding them is a difficult one. The diet should be measured, if necessary, and the caloric intake charted. Supplementary infusions of dextrose and protein hydrolysates are often necessary to bring up the caloric intake and to maintain fluid balance. A normal level for hemoglobin should be insured by frequent transfusions of blood.

There is increasing evidence to indicate that one of the principal features of hepatic insufficiency is a failure to metabolize ingested protein. Many patients who have primary hepatic disease have, as is generally known, significant reductions in the serum albumin with or without a compensatory rise in globulin. Not a few have albumin levels of less than 3.5 Gm. per hundred cubic centimeters of serum, a point at which ascites and edema will usually occur. The hypoproteinemia in these cases should be vigorously treated and it has often been noted that [illegible] will run parallel to a rising serum albumin level. The amount of plasma and serum albumin required to affect serum protein levels is large. The necessary dose of plasma is usually 500 to 750 cc. two or three times a week,[14] until a normal blood protein level is reached and 250 to 500 cc. weekly thereafter to serve as a maintenance dose. Serum albumin should be given in initial doses of 50 to 100 Gm. daily, until the serum proteins reach a safe level. A maintenance dose of 25 to 50 Gm. every few days thereafter will usually suffice.

Recent studies at the Rockefeller Institute indicate that the use of extract of liver may enhance the beneficial effects of infused protein.[14] The Rockefeller workers, using a special preparation of liver designed for intravenous use, have, by gradually increasing the amounts injected, brought the dosage up to 10 cc. two or three times a week. The material is given diluted with isotonic solution of sodium chloride and does not often produce any reaction, even if its administration is continued over fairly long periods. Crude liver extracts also have had a beneficial effect, but their use is more likely to be attended by reactions than is that of the purified extract.

The use of such lipotropic substances as choline and methionine is now in the investigative stage, and there is some rather inconclusive evidence to indicate that they may be of therapeutic value. In a recently reported series of cases[15] of infectious hepatitis the use of these substances did not shorten the course of the disease, and a personal experience of mine with patients who had homologous serum jaundice appeared to be in line with these results. However, as Beams[16] has claimed, there is a reasonable basis for the use of these substances if the patient has a large and presumably fatty liver.

In an earlier paragraph it was stated that chronic hepatic insufficiency presents many of the features of a complex deficiency disease. On this basis it is now the usual practice to supplement the treatment mentioned previously with liberal quantities of vitamins. Some source of the vitamin B complex seems to be an essential part of treatment. If powdered brewers' yeast can be tolerated it may be given in doses up to 30 Gm. three times daily, diluted in tomato juice. Many patients object to its taste, and it is necessary to depend on the various proprietary preparations of the B complex in concentrated form. Thiamine chloride and nicotinic acid should be given in liberal amounts to patients who are receiving large quantities of dextrose intravenously. These portions of the B complex enter into the composition of enzyme systems essential to the metabolism of carbohydrate and may readily be exhausted if many vitamin-free calories are given. Thiamine and nicotinic acid also apparently have a place in the treatment of hepatic coma and the encephalopathic states, although they do not by any means constitute specific remedies for these conditions.

Ascorbic acid requirements may be met by the liberal use of orange juice, which increases the palatability of the diet. Vitamin D and extra calcium salts may be added to the diet of patients who show evidence of osteoporosis. Vitamin K is apparently not utilized in the presence of primary injury of the hepatc cells, although large doses may have some effect in keeping the blood prothrombin above a critical level.

I am not aware of any specific need for vitamin A, riboflavin, pyridoxine hydrochloride, pantothenic acid or folic acid (the Lactobacillus casei factor), although they may be employed if any specific indications for their use can be demonstrated.

A final word may be said in regard to the treatment of hepatic insufficiency. It is far easier to prevent than to treat and, once it appears, there seem to be no specific remedies available other than those described previously. These should be pushed vigorously in the hope of maintaining the best possible nutritional state for the patient and allowing time for some regeneration of hepatic tissue. Anoxemia, which may be a feature in some cases of hepatic failure, appears to depend on a qualitative alteration of hemoglobin.[17] The only means of treatment known to date are to supply normal hemoglobin by transfusions of blood and to administer oxygen by appropriate means. Recent studies on cytochrome C[18] indicate that this substance is capable of correcting anoxemia under certain conditions, and its use in hepatic disease will, no doubt, be investigated further.

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[13] Patek, A. J., Jr.: Treatment of Alcoholic Cirrhosis of the Liver with High Vitamin Therapy, Proc. Soc. Exper. Biol. & Med. **37:** 329-330 (Nov.) 1937.

[14] Hoagland; Kunkel; Labby, and Shank: Therapy of Infectious Hepatitis, Bumed News Letter **7:** 8-13 (May 24) 1946.

[15] Hoagland, C. L., and Shank, R. E.: Infectious Hepatitis: A Review of Two Hundred Cases, J. A. M. A. **130:** 615-621 (March 9) 1946.

[16] Beams, A. J.: The Treatment of Cirrhosis of the Liver with Choline and Cystine, J. A. M. A. **130:** 190-193 (Jan. 26) 1946.

[17] Keys, A., and Snell, A. M.: Respiratory Properties of the Arterial Blood in Normal Man and in Patients with Disease of the Liver: Position of the Oxygen Dissociation Curve, J. Clin. Investigation **17:** 59-67 (Jan.) 1938.

Whatever success has been attained in the treatment of acute and chronic primary hepatic disease has been achieved by following in detail the program described in previous paragraphs. Patience, persistence and attention to every demonstrable abnormality of metabolism are necessary. The results in such hitherto hopeless conditions as portal cirrhosis have been highly encouraging, and not a little of the improvement in surgical results may be due to the application of these principles.

SUMMARY AND CONCLUSIONS

Success in the management of jaundiced patients appears to depend on increased accuracy of diagnosis, especially in the differentiation of obstructive from hepatocellular jaundice. The value of "profile" hepatic functional studies, especially those concerned with urobilinogen metabolism, is discussed.

The indications for surgical intervention in cases of jaundice include (1) the proved or presumed presence of stone, (2) the development of jaundice after cholecystectomy, (3) the presence of associated biliary fistulas and (4) proved complete acholia. The relative contraindications for surgical treatment are discussed with reference to the signs and symptoms of serious primary or secondary hepatocellular injury.

The established principles of medical treatment include a highly nutritious diet, the maintenance of normal hemoglobin and protein levels, the use of vitamins for the correction of specific deficiencies and the employment of lipotropic substances and liver extract.

ABSTRACT OF DISCUSSION

Dr. Ralph Adams, Boston: The common duct has been explored in 35 per cent of the patients operated on for gallstones, which have been found in about 40 per cent of the ducts explored. Dr. Snell has clearly shown the differential diagnostic value of certain laboratory tests, particularly that of the high serum bilirubin, low prothrombin and altered urobilinogen excretion. The purely clinical diagnostic points in carcinoma of the pancreas or bile ducts are progressive jaundice, frequently accompanied by backache, and the other symptoms usually associated with jaundice. In a fourth of the cases at Lahey Clinic there have been associated stone or fibrosis, preventing enlargement of the gallbladder. Every obstructively jaundiced patient should be offered surgical therapy after suitable preparation, unless it can be proved beyond reasonable doubt that the jaundice is caused by parenchymatous hepatic disease. This implies that the surgeon undertaking the care of such a patient should be qualified to perform the pancreatic resection which may be necessary if carcinoma is found or, alternatively, should possess the judgment and the skill required to decompress the gallbladder and bile ducts and to avoid the mishaps and missteps which can seriously influence the chances that the patient may have for successful survival of later resection by a more experienced operator. Three types of decompression are used: a simple stab wound into the gallbladder for the severely jaundiced and ill patients; second, a T-tube placed very low—and let me emphasize "very low"—in the common duct, in case there be fibrosis of the gallbladder or stones, or previous removal of the gallbladder; third, and preferably, a long loop anticolic cholecystojejunostomy with jejunojejunostomy as the first stage procedure. The requirement is the relief of jaundice. The diagnosis may be left in doubt. The diagnostic aids are the diffuse dilatation of the biliary tree or palpable mass in the head of the pancreas. A radical pancreatoduodenectomy has now been done in 34 cases. In 10 cases resection was done in one stage; in 24 ot was done in two stages to gain the advantages of nutritional and chemical preparation before undertaking the radical operation. This period of preparation usually will need to be two to three weeks in length, but a longer period may be required in the presence of severe hepatic damage. An important point, 14 of the 34 patients had carcinoma of the ampulla, the type of obstruction which causes early jaundice, tends to bring the patient at an early stage to his physician and, therefore, constitutes the group in which the more favorable results may be anticipated; and, secondarily, the type of case in which the surgical intervention is easiest. Five of these 34 patients, 15 per cent, died in the hospital; 10, or 30 per cent, have subsequently died, leaving 19, or 55 per cent surviving for a period up to four years. The proper management of the jaundiced patient with carcinoma of the pancreas or bile ducts is a properly staged surgical resection.

Dr. Leon Goldman, San Francisco: In the recognition and preparation of jaundiced patients for surgical intervention a host of liver function tests may be used, and one may be informed or confused by the results of the various tests. There is no test that seems outstanding in the determination of hepatic function. Every jaundiced patient should have the test for prothrombin response to vitamin K performed, not only because of its help in the determination of whether the patient has intrahepatic or obstructive jaundice but also because of the need for knowing what the prothrombin concentration is in the blood, irrespective of whether the patient is going to be operated on. The second test of hepatic function which has definite therapeutic aid is the plasma protein determination. The finding of a low plasma albumin level, with jaundice, suggests that the patient has definite hepatic disease and that, if surgical intervention is indicated, considerable protein therapy may be necessary. One of the pitfalls of liver function tests as a differential diagnostic point in obstructive jaundice is the fact that patients with long-standing, obstructive jaundice also have some hepatic insufficiency, particularly if there is inflammation present, such as is often seen in association with calculi in the common duct. This is borne out by statistics, which show that the mortality rate of patients with stone in the common duct is from two to three times higher than the mortality rate of those patients in whom exploration of the common duct is not necessary. The mortality rate of jaundiced patients with stone in the common duct is also higher, because this operation is indicated more in the upper age groups. An attitude which has been common in the past is that if a patient has a painless type of jaundice, the physician can wait out the case and the diagnosis will show itself; if the type of jaundice is intrahepatic, the jaundice may subside, but if the patient has a malignant growth the jaundice will deepen and the patient's disease will progress. That philosophy is a thing of the past and should not be carried farther; to overlook a diagnosis of carcinoma of the head of the pancreas or carcinoma of the ampulla is to deny the patient a few years of life, or possibly even a cure from cancer of the ampulla or head of the pancreas. An early diagnosis must be made if these patients with cancer, whom Dr. Adams mentioned, are to be successfully operated on with a curative approach rather than to be given merely a sidetracking operation in a palliative manner.

Dr. I. Snapper, New York: Notwithstanding the galaxy of liver function tests which are currently used in the clinical laboratories, there are still conditions in which a new test of hepatic function seems to be in order. In patients who at the same time suffer from syphilis and from gallstones, jaundice which develops after treatment with neoarsphenamine may pose a complicated problem for differential diagnosis. In such patients it is difficult to decide whether the jaundice is due to an obstruction by a stone in the common duct or to the treatment with arsphenamine. The difficulty arises because the common functional tests, when applied to a case of jaundice due to neoarsphenamine, seem to indicate the presence of obstructive jaundice (Hanger). In this quandary the following test has proved helpful. Administration of 6 Gm. of sodium benzoate by mouth leads in normal persons to the excretion of considerable amounts of glucuronic acid in the urine. Administration of the equivalent amount of 5 Gm. of benzoic acid to normal persons does not lead to the excretion of glucuronic acid in the urine. When, however, 5 Gm. of benzoic acid are given to patients with hepatic damage (cirrhosis of the liver, hepatitis or widespread hepatic metastases) the glucuronic acid reaction in the urine becomes strongly positive. In a gallstone patient in whom jaundice develops after neoarsphenamine therapy the excretion of glucuronates in the urine after the administration of 5 Gm. of benzoic acid indicates the presence of hepatic damage. Such a patient has no obstructive jaundice but has an arsphenamine hepatitis, even if all the other current tests seem to point to the presence of an obstruction in the common duct. In such a case operative intervention should, of course, be contraindicated because of the possible danger of hepatic necrosis after the trauma of the laparotomy. This glucuronate test after ingestion of 5 Gm. of benzoic acid can also be used in other instances in which obstructive jaundice has to be differentiated from hepatic jaundice. In regard to methionine therapy, it has been my experience that if a patient with cirrhosis of the liver and hepatic fetor takes methionine the hepatic odor becomes much more decided. Would it be possible that in some cases of hepatic cirrhosis in which deamination is impaired the administration of large doses of amino acids like methionine could give rise to excessive production of toxic metabolites, which ultimately might even precipitate cholemia?

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[18] Proger, S., and Dekaneas, D.: Some Effects of Injected Cytochrome C on Myocardial and Cerebral Anoxia in Man, J. Clin. Investigation, to be published.

DR. ALBERT M. SNELL, Rochester, Minn.: With regard to Dr. Adams' comments about surgical indications, I can only hope, in approaching the matter of the Whipple operation, that surgeons and internists will pool their data and their resources in the hope that we shall be able to do better. His report was most encouraging. These patients ought to be studied with unusual care preoperatively and postoperatively, if only for the sake of the record. In regard to Dr. Snapper's question about methionine, I have not had a large enough experience with it to say what effect it has on fetor hepaticus. No one knows exactly what produces this symptom, but it is known that it is of great prognostic significance. I shall certainly attempt to get more information on this point. In reference to tests of hepatic function it has been said that their greatest field of usefulness lies in giving the physician time to examine the patient and to take his history. A battery of them are being used, not because physicians are impressed with their individual value but because no one test is particularly reliable, and there is need for all the information which can be obtained concerning many jaundiced patients. As far as hepatitis due to arsphenamine is concerned, one may reasonably question its existence as a clinical entity. In many instances the etiologic factor is contamination of a syringe with human blood containing the virus of infectious hepatitis. The report from a British venereal disease clinic may be recalled, in which, by going back to the individual syringe technic, the workers were able to cause so-called arsphenamine jaundice to disappear. Apparently the condition is a form of homologous serum jaundice. At least, in almost all clinics the incidence of the disease appears to rise at about the third or fourth month after treatment has been begun, corresponding to the long incubation period. Two questions have been handed to me. Do I place any significance on an elevated value for total cholesterol? Yes, I think it means, in most instances, more or less complete biliary obstruction. There is, however, a group of disturbances of lipoid metabolism in which this value may be greatly increased, and in fact the extremely large increases in cholesterol and total lipids are often not the results of biliary obstruction but of primary lipoidosis. Another physician has asked how long the complete biliary obstructive phase of infectious hepatitis may last. So far as I know, the duration of this phase is only a matter of four to five days. There may be a few patients in whom suppression of bilirubin formation is almost complete, and these are the persons who so often have an extensive necrosis of liver cells.

INTRAVENOUS THERAPY OF CIRRHOSIS OF THE LIVER

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Investigations in recent years have made great advances in elucidating the physiology of the liver and the metabolic processes associated with this organ. The feeding of various experimental diets to animals has demonstrated that the liver is unusually susceptible to nutritional inadequacies and imbalances. The glycogen content of hepatic cells has been observed to decrease remarkably after short periods of starvation, and accumulations of fat within these cells have been produced in experimental animals by diets high in fat and by the administration of various hepatotoxins. A cirrhosis-like syndrome has been produced in animals on diets of low protein and high fat content,[1] and the ability of choline and methionine to prevent the accumulation or to accelerate the removal of hepatic fat (lipotropic effect) has been described.[2]

Studies of cirrhosis in human beings have served to emphasize the importance of the nutritional state. Rao [3] observed that cirrhosis of the liver is of relatively high incidence among Moslems, a population group which does not use alcoholic beverages but in which dietary inadequacies of various types are readily demonstrated. Therefore it seemed likely that improper diet or specific nutritional deficiencies might be factors in the causation of the disease. Later, Patek and Post demonstrated the effectiveness of a balanced and nutritious diet supplemented with vitamins of the B complex group in the treatment of cirrhosis.[4] Patients thus treated were found to have a longer survival period, and in many cases ascites and other manifestations of the disease either disappeared or decreased in severity.

Recently it has been reported that the use of choline in treating patients with cirrhosis of the liver achieves similar therapeutic results.[5]

A study of cirrhosis of the liver was initiated in the Hospital of the Rockefeller Institute for Medical Research in 1941. Investigations included attempts to evaluate the effects of treatment with a diet adequate in calories, protein, carbohydrate and fat, combined with the administration of large quantities of a crude. water-soluble liver extract given intravenously. The inclusion of liver extract in the experimental treatment was prompted by earlier reports of its apparent benefit in cirrhosis.[6]

Dr. Hoagland died Aug. 2, 1946.

From the Hospital of the Rockefeller Institute for Medical Research.

[1] György, P.: Experimental Hepatic Injury, Am. J. Clin. Path. **14:** 67-88 (Feb.) 1944.

[2] Best, C. H.: Factors Affecting Fat Transport in the Animal Body, Am. J. Digest. Dis. **13:** 155-158 (May) 1946.

[3] Rao, M. V. R.: An Investigation into "Decompensated Portal Cirrhosis," Indian J. M. [illegible] **21:** [illegible] (Oct.) 1933.

[4] Patek, A. J., Jr., [illegible] of Cirrhosis of the Liver by a Nutritious Diet and Supplements Rich in Vitamin B Complex, J. Clin. Investigation **20:** 481-505 (Sept.) 1941.

[5] Beams, A. J.: The Treatment of Cirrhosis of the Liver with Choline and Cystine, J. A. M. A. **130:** 190-194 (Jan. 26) 1946.

[6] Gilbert, A., and Carnot, P.: Note preliminaire sur l'opothérapie hépatique, Compt. rend. Soc. de biol. **48:** 934-937 (Nov. 21) 1896. Mouras, J.: De la curabilité de la cirrhose alcoholique en particulier par l'opothérapie hépatique, Thesis, Paris, no. 278, 1901. Gyr, E.: Un cas de cirrhose avec ascite traité par l'opothérapie, Rev. méd. de la Suisse Rom. **28:** 413-421 (June 20) 1908. Büttner, H. E.: Experimentelle und Klinische Untersuchungen über die Wirkung Einspritzbarer Leberextrakte, Fortschr. d. Therap. **11:** 257-264 (May) 1935. Bolognese, D.: Contributo allo studio dell'epatoterapia [illegible] di fuori delle anemie con estratti concentrati [illegible] ticolare reguardo alla diuresi. Policlinico (sez. [illegible] 1936.

The results of therapy at this hospital have been encouraging. Ascites, peripheral edema and other manifestations of the disease have disappeared in many instances. Tests indicate that liver function has improved during the treatment period, and there is evidence of an increase in the survival period in the group of 30 patients studied. This paper describes the treatment used and the observations made which indicate its possible therapeutic effectiveness.

PLAN OF THERAPY WITH INTRAVENOUS CRUDE LIVER EXTRACT

Since so little was known concerning the nature of the factor or factors in liver extract which might be helpful in the management of cirrhosis, it was decided to prepare an extract which was as crude as was consistent with safe administration. The intramuscular route, which is highly satisfactory when commonly-used refined or semirefined extracts of liver are administered in small doses, has proved unsatisfactory when cruder extracts are employed, especially in large dosage. Until information was acquired concerning the optimum dosage for the treatment of cirrhosis, it was thought advisable to give the extract more often and in larger quantities than had been deemed necessary in the treatment of pernicious anemia. Moreover, cirrhosis of the liver of long standing is frequently complicated by general wasting of the musculature, and unless multiple areas of muscle are used for administration of the extract it may be absorbed slowly and thereby increase the hazard of sterile abscesses developing at the site of injection. Likewise, the pain occasioned by the administration of 5 to 10 cc. of crude extract may be so intense as to compel the patient to refuse further treatment.

At the Hospital of the Rockefeller Institute these difficulties inherent in the use of liver extract intramuscularly have been overcome by the development and production over a period of years of a crude, water-soluble liver extract which can be given safely in large quantities by the intravenous route. This extract of dry powdered liver is the water-soluble, alcohol-insoluble portion (Cohn's fraction G[7]) which by permutit treatment[8] has been rendered free of pyrogens and the toxic amines and esters whose injection may occasionally produce an alarming decrease in blood pressure. Final tests of toxicity and sterility have been carried out on selected samples before administration to patients.

Since the Rockefeller formula for the preparation of the extract employed in this study has not been previously reported, it is here given.[9]

Preparation of the Extract.—Powdered liver extract, 440 Gm. (Lilly 343), are added to 1,600 cc. of pyrogen-free distilled water, and the solution is boiled with constant stirring for five minutes. While boiling, 6 cc. of tricresol is added. The mixture is then allowed to cool and is diluted to 2,000 cc. by the addition of distilled water. The material is permitted to stand in a covered glass jar at room temperature for twenty-four hours. The supernatant fluid is then siphoned off, care being exercised not to disturb the fine sediment. The clear solution is passed through a column of permutit contained in a tube of pyrex glass 130 cm. in length and 2.5 cm. in diameter. The permutit filter is made as follows: a small quantity of glass wool is placed in the bottom of the tube and a 25 cm. layer of quartz gravel or alundum, previously ignited and washed, is added; then a 60 cm. layer of permutit is placed on top of the alundum or gravel layer, distilled water being added in amounts sufficient to keep the permutit wet while it is being added to the column. Filtration is facilitated by keeping the tube filled with distilled water until the filtration of liver extract is begun. The first, or dilute, portion of the extract coming through the permutit column is discarded. It is essential that fresh permutit be used for each lot of extract or changed if at any time during the filtration of a given lot of extract a sudden rapid flow indicates that the adsorptive surface of the permutit has been exhausted. The volume of the filtered extract is determined, and 30 cc. of 40 per cent sodium hydroxide per liter is added. The p_H of the solution is carefully adjusted with dilute alkali or acid to between 8.2 and 8.3. The extract is then autoclaved in a pyrex flask, allowing twenty minutes per liter at 166 C., after which the material is filtered while hot through no. 954 Eaton and Dikeman filter paper to remove the flocculent precipitate which forms during autoclaving. Subsequent to this the p_H of the extract is 7.0 to 7.2. The material is then bottled in 10 cc. amounts in sterile vials, and rubber caps are applied. Hypodermic needles are inserted beside the stoppers in order to permit equalization of pressure during the second autoclaving, and the vials are again autoclaved for fifteen minutes at 116 C. The needles are removed, and the stoppers are pushed tightly into the vials with a sterile instrument. The vials are sealed with collodion and stored in the refrigerator until used. Tests for sterility and toxicity are carried out on selected samples of extract in accordance with requirements published in section 36 of the regulations of the National Institute of Health (revised Jan. 26, 1942). The liver extract may be given intramuscularly without further change. For intravenous use, the extract should be diluted and administered slowly after preliminary tests for sensitivity have been carried out.

Since 1941 more than 8,000 intravenous injections of this extract have been given without serious reactions to patients suffering from various types of hepatic insufficiency. It has been given occasionally in daily doses as large as 20 cc. diluted to 50 cc. with isotonic solution of sodium chloride or distilled water and administered intravenously.[10] In the present study, following preliminary tests for sensitivity, doses of this magnitude were administered two to three times weekly. At the onset of therapy and during the phase of ascites, icterus or esophageal hemorrhage the patients were given the full dosage (20 cc. diluted to 50 cc.) at least three times per week. Later, after these manifestations had been controlled, maintenance therapy was continued with the same dosage twice a week.

Allergic reactions from this intravenous liver extract were fortunately infrequent but of sufficient importance to make careful pretesting imperative. To test for sensitivity, from 0.1 to 0.2 cc. of the undiluted extract is given intramuscularly. If within thirty minutes no untoward reaction has occurred (characterized by flushing of the skin, headache, difficulty in breathing, cough or other signs of allergic reaction), slowly inject intravenously 0.5 cc. of the extract diluted with 20 cc. of sterile, pyrogen-free, isotonic solution of sodium chloride, distilled water or 5 per cent dextrose. If, during any injection, the patient complains of headache or shows decided flushing of the skin or signs of allergic phenomena the diluted extract should be given even more slowly. Thereafter a series of graduated doses should be employed to initiate treatment, as illustrated in the following sample schedule:

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[7] Cohn, E. J.; Minot, G. R.; Alles, G. A., and Salter, W. T.: The Nature of the Material in Liver Effective in Pernicious Anemia, J. Biol. Chem. **77**: 325-358 (May) 1928.

[8] Folin, O., and Bell, R. D.: Application of a New Reagent for the Separation of Ammonia: I. The Colorimetric Determination of Ammonia in Urine, J. Biol. Chem. **29**: 329-335, 1917.

[9] The valuable technical assistance of Miss Dorothy Sloan in the successful preparation of this material is acknowledged. For the last two years of the study the extract made according to the Rockefeller formula was kindly supplied by Eli Lilly and Company, Lederle Laboratories, Inc., and Parke, Davis & Company.

[10] Hoagland, C. L., and Shank, R. E.: Infectious Hepatitis: A Review of Two Hundred Cases, J. A. M. A. **130**: 615-621 (March 9) 1946.

1st day 1 cc. diluted to 25 cc.
2d day 3 cc. diluted to 30 cc.
3d day 5 cc diluted to 50 cc.
4th day 10 cc diluted to 50 cc.
5th day 15 cc diluted to 50 cc.
6th day 20 cc diluted to 50 cc.
Subsequently, 20 cc diluted to 50 cc. 2-3 times per week

The rate of dosage increment can be varied at will; for example, the time periods between doses may be extended to two or three days in those patients who exhibit minor reactions after any dose. In such cases the dose may also be decreased by one step in the schedule, or the same dosage may be repeated once or twice before proceeding to the next. Solutions should enter the vein at a rate not to exceed 5 cc. per minute. If pronounced flushing occurs, the solution should be injected more slowly or greater dilution should be used.

In only 2 patients, not included in the present study, was the administration of liver extract by the intravenous route considered inadvisable. Both patients were extremely sensitive to liver extract in any form and by any route of administration. Recent experience, however, has shown that, even in the exceptional case of sensitivity to crude liver extract, desensitization with minute doses of extract before administration of the full dose can be safely accomplished.

MATERIAL AND METHODS

The present report concerns the results of treatment of 30 patients with cirrhosis, using intravenous crude liver extract for six months or longer. Twenty-seven of these patients had Laennec's cirrhosis and 3, biliary cirrhosis. In all instances the diagnosis was well established by consideration of the historical details, physical examination, appropriate roentgenologic studies of the esophagus, abdomen and gastrointestinal tract and the use of a wide variety of tests of hepatic function and measurements of pertinent serum constituents. In 14 patients the diagnosis was confirmed by exploratory laparotomy or needle biopsy.

All patients were in the "decompensated" stage of cirrhosis, as indicated by the presence of icterus, edema, ascites or esophageal hemorrhage, singly or in combination. More than half of the patients had experienced some sign of hepatic decompensation one to six months before being given liver extract (table 1). Since the period immediately after decompensation has been demonstrated to be the most hazardous for the survival of patients with cirrhosis,[11] the major portion of the group presented a considerable challenge to the plan of therapy under investigation. No planned selection was exercised in the choice of patients beyond requiring that each case represent manifestly decompensated but not terminal cirrhosis.

The patients were hospitalized when necessary at the Hospital of the Rockefeller Institute and the New York Hospital. Many of the cases were referred from the latter institution for consultation and continuance of their care. When sufficient improvement had been accomplished by a short period of hospitalization, the patients were allowed to join the ambulatory group being treated with intravenous liver extract in the outpatient department of the Rockefeller Institute hospital. Abdominal paracenteses were performed in the hospital or, more frequently, in the outpatient department as the need arose. Diuretics were seldom used.

It is important to point out that a majority of the patients were more fortunate economically than the indigent alcoholic addicts with cirrhosis who are so often encountered in a general hospital service. Most of the patients were able to exercise good judgment in matters of personal hygiene and to apply reasonable intelligence to problems arising in the course of their protracted therapy. This fact made the group a particularly favorable one with which to work, since the importance of abstinence from alcohol and the maintenance of adequate nutrition were readily appreciated by most patients and observed without compromise.

No strict supervision of diet was undertaken beyond instructing the patients to select foods high in protein and rich in carbohydrate; no foods were prohibited if tolerated without distress[12] Lipotropic substances, such as choline or methionine, were not prescribed, since it was believed that these food elements would be plentiful in an adequate dietary intake. Only in those patients exhibiting clinical signs of specific vitamin B deficiency at the onset of treatment were supplements of the vitamin B group prescribed, and these were continued only for the short period required for manifestations of deficiency to be overcome. In their search for medical care 18 patients had received dietary and vitamin therapy from other medical sources before being referred to the Rockefeller Institute hospital. Many had also received short trials of methionine and choline therapy. In all these patients previous management had proved to be ineffective and in no case did the patient consider that he had been benefited.

TABLE 1.—*Historical Data in Thirty Patients with Cirrhosis*

	Patients	
	No.	%
Fatigue	30	100
Recent icterus	28	93
Anorexia.	27	90
Loss of weight.	26	87
Nausea	25	83
Edema	24	80
Alcoholism	21	70
Swelling of abdomen	21	70
Inadequate diet	20	67
Diarrhea	17	57
Esophageal hemorrhage or melena	7	23
History of icterus in remote past	7	23
History of previous dietary and high vitamin treatment without benefit	18	60
Months decompensated before therapy		
1 to 6	16	53
7 to 12	4	13
More than 12	10	33
Number of paracenteses previous to liver extract treatment		
1 to 5	8	27
6	1	3.3
22	1	3.3
45	1	3.3

An excellent follow-up experience was obtained with this group. Observation periods varied from twenty-one to thirty-eight months, with an average for the group of approximately two years. With little exception the patients reported dependably two or three times a week to receive liver extract intravenously. During this treatment period there was opportunity for close observation of the clinical progress in each case and for the management of the numerous minor medical problems that arise in the course of a chronic illness.

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[11] Ratnoff, O D., and Patek, A. J.: The Natural History of Laennec's Cirrhosis of the Liver, Medicine 21: 207 268 (Sept) 1942.

[12] Hoagland, C. L.; Labby, D. H.; Kunkel, H. G, and Shank, R. E.: An Analysis of the Effect of Fat in the Diet on Recovery in Infectious Hepatitis, Am J. Pub Health 36: 1287-1292 (Nov.) 1946.

CLINICAL FEATURES

The distribution of the patients by age and sex is given in table 2, and an analysis of the presenting histories is listed in table 1. Fatigue was a complaint common to all patients, and a large number had a history of recent icterus with the onset of hepatic decompensation. Gastrointestinal distress, nausea and anorexia with resulting loss of weight were prominent symptoms. Twenty-one of the 30 patients were chronic alcoholic addicts, and 20 of these had a history of inadequate diet. Of the 9 nonalcoholic patients, 5 had icterus in childhood or adolescence. Seven patients had experienced esophageal hemorrhage. No patients had a history of tropical disease or residence in a tropical country.

Table 2.—*Distribution by Age and Sex of Thirty Patients with Cirrhosis*

Age	Sex ♂	Sex ♀	Patients No.	Patients %
15 to 20	0	1	1	3.3
21 to 30	1	0	1	3.3
31 to 40	3	1	4	13.3
41 to 50	8	4	12	40.0
51 to 60	5	3	8	26.7
61 to 70	2	2	4	13.3
Total	19	11	30	

Physical signs indicative of hepatic disease with decompensation were observed in all the patients (table 3). Icterus was a common physical observation. The liver was enlarged in 22 patients, while in 8 it was not palpable and by percussion was reduced in size. Twenty-one patients had ascites, and there was accompanying hydrothorax in 4 of these. In 4 other patients icterus, ascites and esophageal hemorrhage coexisted, indicating an advanced degree of hepatic insufficiency. Esophageal varices were demonstrated roentgenologically in 11 patients. Over 90 per cent of patients displayed palmar erythema, or "liver palms," and spider angiomas. Over 50 per cent of the group gave evidence of hemorrhagic phenomena, such as easy bruising and bleeding gums, in association with depressed prothrombin values.

Table 3.—*Physical Signs Present in Thirty Patients with Cirrhosis Before Treatment with Intravenous Liver Extract*

	Patients No.	Patients %
Icterus	28	93
Palmar erythema	28	93
Spider angiomas	27	90
Collateral circulation over abdomen	25	83
Splenomegaly	25	83
Edema	22	73
Enlarged liver	22	73
Ascites	21	70
Icterus + ascites	19	63
Hemorrhoids	16	53
Hemorrhagic phenomena (bruising, bleeding gums)	16	53
Esophageal varices	11	37
Small liver	8	27
	8	27
	4	13
	4	13

LABORATORY FEATURES

The innumerable and diverse functions of the liver make it impossible to use any single test as a reliable index of the functional capacity of the liver. Moreover, hepatic failure is a relative matter in which individual functions are attacked selectively and with differing intensity. In approaching the evaluation of a new therapeutic agent it was thought advisable to use a number of different procedures to test the ability of the liver to perform its diverse metabolic functions. The laboratory aspect of the study, therefore, included a wide assortment of measurements and tests which were performed at intervals throughout the period of observation of each patient. These included measurements of the total plasma proteins with determination of the albumin-globulin ratio, the prothrombin time, alkaline phosphatase, serum bilirubin, total cholesterol and cholesterol esters with calculation of the free to total cholesterol ratio, and determination of the carotene and vitamin A levels of plasma. In addition, the cephalin-cholesterol flocculation reaction, the sulfobromophthalein sodium excretion test (5 mg. per kilogram of body weight in a forty-five minute interval) and the thymol turbidity reaction of the serum were determined (tables 4, 5 and 6). The technics employed for these measurements in this laboratory have been reported in detail in a previous communication.[10] Of this battery of tests, the measurement of plasma protein and the albumin-globulin ratio, serum bilirubin, ratio of free to total cholesterol and sulfobromophthalein excretion tests were considered to reflect most accurately the clinical state of the patient and the functional capacity of the liver. These tests, as well as those previously listed, were performed at regular weekly intervals during the acute phase of decompensation. Later they were spaced at greater intervals when less clinical change was apparent and as the course of the disease became better stabilized with continued therapy.

Table 4.—*Alterations in Plasma Protein Levels Observed During the Course of Intravenous Liver Extract Therapy of Thirty Patients with Cirrhosis*

	Percentage of Patients			
	Before Treatment	After 6 Mos. of Treatment	After 12 Mos. of Treatment	After 2 Yrs. (± 3 Mos.) of Treatment
Total protein 6.0 Gm./100 cc. or higher	43	73	79	86
Albumin-globulin ratio 1.5 or higher	22	22	33	43
Plasma albumin 3.5 Gm./100 cc. or higher	22	43	50	66
Plasma globulin 3.0 Gm./100 cc. or higher	56	59	50	39

Table 5.—*Alterations in Serum Bilirubin and Sulfobromophthalein Sodium Retention Observed During the Course of Intravenous Liver Extract Therapy of Thirty Patients with Cirrhosis*

	Percentage of Patients			
	Before Treatment	After 6 Mos. of Treatment	After 12 Mos. of Treatment	After 2 Yrs. (± 3 Mos.) of Treatment
Serum bilirubin (mg./100 cc.)				
0.2 to 0.6	10	22	26	30
0.7 to 1.0	20	24	36	30
1.1 to 2.0	30	26	16	17
2.1 to 3.0	10	16	10	13
Greater than 3.0	30	12	12	10
Sulfobromophthalein sodium retention (%)				
0 to 10	0	21	31	33
11 to 20	17	21	28	14
21 to 30	33	37	26	46
Over 30	50	21	15	7

RESULTS

The results of therapy are summarized in tables 4 to 8. Thirteen of the 30 patients were well enough to remain ambulatory throughout the period of observation and treatment. The remainder became ambulatory after a short period of hospital observation, so that by the time therapy was well under way the entire group could be managed in the outpatient department.

One of the first signs of improvement was a return of appetite, which in many instances became hearty after having been practically nonexistent before treatment. Coincident with this, a sense of well-being developed and fatigability diminished. The evidences of improved nitrogen storage were clinically apparent by the reversal of tissue wasting and a gain in body weight (table 7). Although changes of weight in patients with ascites and edema were difficult to evaluate, the appearance of flesh in previously wasted areas left little doubt that tissue regeneration and protein storage had occurred. Many of the patients previously employed continued to work throughout the period of therapy, but in 14 instances illness prevented patients from working. All the patients eventually were able to carry on their work effectively without the recurrence of the distressing fatigability that characterized their period of symptomatic illness (table 7).

TABLE 6.—*Alterations in the Levels of Various Constituents of the Blood and Tests of Liver Function Observed During the Course of Intravenous Liver Extract Therapy of Thirty Patients with Cirrhosis*

	No. of Patients Tested	Per Cent of Patients	
		Before Therapy	After 2 Yrs. (±3 Mos.) of Therapy
Cephalin cholesterol flocculation......	29		
0 to 2+ *..........................		28	86
3+..........................		28	10
4+..........................		44	4
Thymol turbidity reaction............	27		
1 to 4 units *....................		8	11
5 to 10 units....................		33	56
11 to 15 units....................		33	22
Over 15 units....................		26	11
Alkaline phosphatase..................	26		
0.5 to 6 units *..................		27	57
7 to 10 units..................		35	19
Over 10 units..................		38	24
Free/total cholesterol ratio...........	25		
0.20 to 0.30 *....................		8	28
0.31 to 0.35....................		16	28
0.36 to 0.45....................		40	32
Over 0.45....................		36	12
Carotene	22		
[illegible]		50	18
[illegible]		36	68
Over 0.250 mg./100 cc..............		14	14
Vitamin A	22		
[illegible]		73	32
[illegible]		27	63
[illegible]		0	5

* Normal values.

One of the most satisfactory results was observed in the 21 patients with ascites. Most of these patients had submitted to repeated abdominal paracenteses before being seen at the Rockefeller hospital (table 1). In 7 cases the frequency of paracenteses was materially reduced, and in 12 cases, or 57 per cent of the group, there was complete disappearance of the ascites in two to twelve months after the start of therapy (table 8). One patient with ascites for one year before being seen at the Rockefeller hospital had undergone twenty-two paracenteses in that period of time (table 1). After five months of intravenous liver extract therapy the rate at which ascites reaccumulated became noticeably reduced and the intervals between abdominal tapping lengthened progressively. After eighteen months of biweekly liver extract therapy and fifty-three additional paracenteses, the ascites was completely controlled and has now remained so for an additional period of nine months. There was failure to influence the rate at which ascites reaccumulated in only 2 of the patients. As in the other 7 patients with persistent ascites, however, these 2 were better able to tolerate paracenteses, since with improved appetite and restored nutrition they experienced a return of vigor. In this group a phenomenon was frequently observed that suggested a direct effect of intravenous liver extract therapy on the factors which control fluid balance in hepatic disease:[13] occasional patients showed a periodic moderate diuresis several hours after the intravenous injection of liver extract. The diminution and final disappearance of edema and ascites, which proceeded over a period of several weeks, was always associated with a gradual increase in urine volume, which thereafter was sustained (chart 1).

TABLE 7.—*Progress of Thirty Patients with Cirrhosis Treated with Intravenous Liver Extract*

	Patients	
	No.	%
Months of liver extract therapy		
6 to 12..................................	8	27.0
13 to 18..................................	18	60.0
19 to 24..................................	3	10.0
More than 24..............................	1	3.3
Normal activity during total period of observation..	13	43.0
Return to normal activity		
After 1 mo. of therapy....................	9	30.0
After 2 mos. of therapy....................	5	17.0
After 3 mos. of therapy....................	3	10.0
Improvement in appetite........................	30	100.0
Decrease in fatigability........................	30	100.0
Disappearance of wasting and increase in body weight	28	93.0

Changes in the constituents of the blood and in the results of tests of hepatic function observed during the period of treatment may be seen in tables 4 to 6. Only 43 per cent of patients in the group exhibited a total plasma protein of 6 Gm. per hundred cubic centimeters or higher before treatment. After six months of therapy 73 per cent were in this group, and by the end of two years this figure had risen to 86 per cent. It is apparent that, although the greatest rise in the total protein level occurred during the first six months of therapy, further improvement in several cases was detectable twelve to twenty-four months after the initiation of treatment. The early alterations in total protein were for the most part due to increases in the albumin fraction. Only 22 per cent of the group exhibited albumin levels of 3.5 Gm. per hundred cubic centimeters or higher at

TABLE 8.—*Effect of Intravenous Liver Extract Therapy on Ascites in Twenty-One Patients with Cirrhosis*

	Patients	
	No.	%
No effect	2	9.5
Decreased frequency of paracenteses..................	7	33.3
Disappearance of ascites..............................	12	57.2

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[13] Labby, D. H., and Hoagland, C. L.: Alterations in Body Fluids During Acute Infectious Hepatitis, Proc. Soc. Exper. Biol. & Med. **63**: 110-114 (Oct.) 1946; Water Storage and the Movements of Body Fluids and Chlorides During Acute Liver Disease, J. Clin. Investigation, to be published. Ralli, E. P.; Robson, J. S.; Clarke, D., and Hoagland, C. L.: Factors Influencing Ascites in Patients with Cirrhosis of the Liver, ibid. **24**: 316-325 (May) 1945.

the start of therapy, but six months later this group had enlarged to 43 per cent, at the end of one year to 50 per cent and within two years to 66 per cent. Initially the globulin fractions were abnormally elevated in 56 per cent of the group, and these values showed little decrease during the first year of treatment. In many instances the globulin levels rose above the pretreatment level during the early course of therapy. Since this often occurred at the same time that the serum albumin was rising, there was little change in the albumin-globulin ratio until the latter half of the first year of therapy. During this period a slight fall in serum globulin was noted for the group, which fall became more evident during the second year of therapy. Changes in the albumin-globulin ratio were therefore delayed until this late period when, in the presence of sustained and improving levels of albumin, the globulin values began to fall (table 4). The increase in plasma protein concentrations and the ability to maintain efficient metabolic levels of albumin seemed to attest to the improved protein-synthesizing capacity of the liver subsequent to therapy.

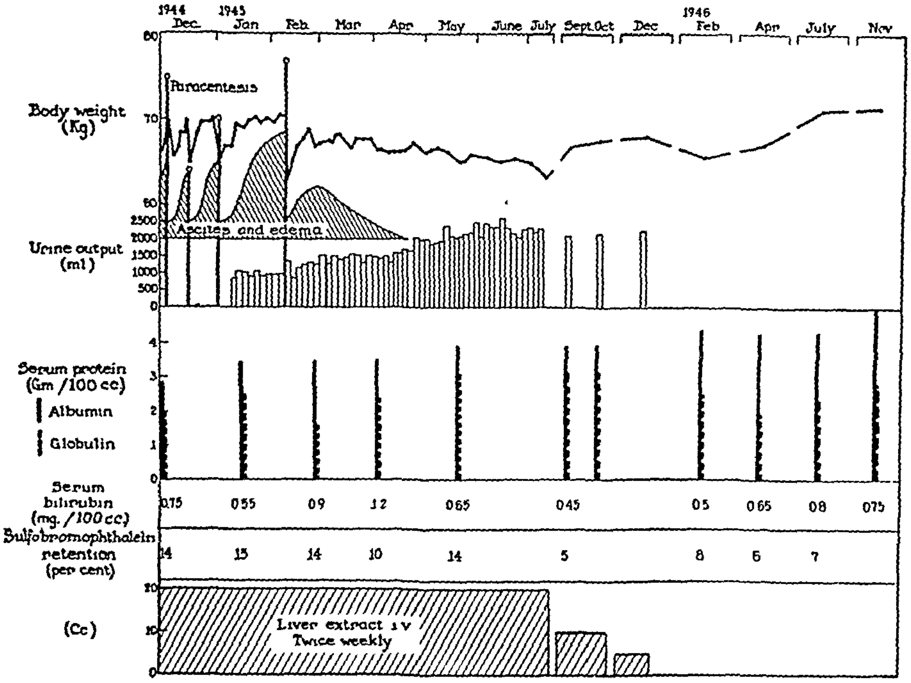

Chart 1 (B S) table 11.—A chronic alcoholic addict had one year of pronounced fatigue, anorexia, icterus and ascites unsuccessfully treated by the family physician with irregular dietary and vitamin therapy; he had forty-five paracenteses prior to treatment with intravenous liver extract. There was improvement in appetite and dietary intake with intravenous liver extract therapy; the disappearance of edema and ascites associated with a rise in urine volume occurred after four and a half months of treatment. Improvement in values for tests of liver function and serum proteins was observed. No relapse has taken place after more than one year of treatment free observation period.

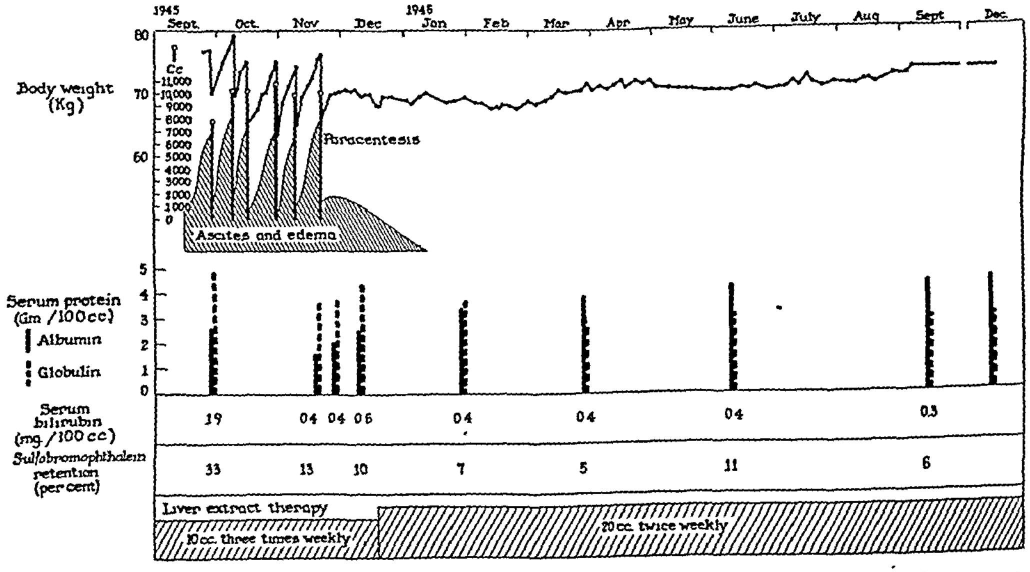

Chart 2 (G. A.).—A man aged 48, a chronic alcoholic addict, had two months of extreme fatigue and complete anorexia, slight icterus, edema, hydrothorax and ascites. The liver and spleen were enlarged; there was a reversal of the albumin-globulin ratio. Disappearance of edema, hydrothorax and ascites occurred before improvement in the plasma proteins and after four and a half months of dietary and intravenous liver extract therapy. Later there was restoration of the plasma protein levels; the patient is still receiving treatment.

The loss of ascites often reflected underlying improvement in the plasma proteins. In several patients, however, the rise in plasma proteins occurred after absorption of the ascites was well established (chart 2). This has been a matter of previous comment.[13]

Seventy per cent of the group showed visible icterus with an accompanying serum bilirubin determination greater than 1.0 mg. per hundred cubic centimeters before treatment, but after two years of treatment 60 per cent had no icterus and a serum bilirubin level of 1.0 mg. per hundred cubic centimeters or less (table 5). Great improvement was noted in the group of patients with initial serum bilirubin concentrations of 3.0 mg. per hundred cubic centimeters or higher. Although 30 per cent of the patients were in this group before therapy, only 12 per cent exhibited serum bilirubin levels of this magnitude after six months of treatment. There was equal improvement in the ability to excrete sulfobromophthalein sodium. Every patient in the group exhibited sulfobromophthalein retention of more than 10 per cent, and half showed more than 30 per cent retention before therapy. After approximately two years of treatment one third of the group exhibited from zero to 10 per cent retention (table 5). There were parallel improvements in plasma concentrations of alkaline phosphatase, carotene and vitamin A and in the free to total cholesterol ratios (table 6). Of all the measurements and tests performed, the cephalin-cholesterol flocculation reaction and the thymol turbidity reaction of the serum proved to be of the least value as accurate indexes of the clinical progress and course of the disease in these patients.

TABLE 9.—*Fatal Cases of Cirrhosis with at Least Six Months' Course of Intravenous Liver Extract Therapy*

Patient	Sex	Age	Clinical Data	Mos of Treatment	Effect of Therapy	Cause of Death
F. C.	♂	33	Nonalcoholic; chronic icterus after inoculation with yellow fever vaccine 3 yrs before; diarrhea, loss of weight and appetite, enlarged liver; A/G * = 2.78/2.85 = 1.0; sulfobromophthalein excretion 37%; bilirubin 3.8 mg./100 cc; "biliary" cirrhosis	10	Improved appetite; weight gain; decreased fatigue	Common duct obstruction with stone; hepatic coma
V. M.	♀	37	Chronic alcoholism; icterus in childhood; 5 mos of high icterus, diarrhea, anorexia and loss of weight; ascites 2 mos; enlarged liver; A/G * = 2.81/3.42 = 0.8, sulfobromophthalein excretion 38%; bilirubin 10.7 mg./100 cc.	3, then lapse of 2 mos., then 14 mos.	Improved appetite; weight gain; decreased fatigue; loss of edema and ascites after 3 mos of treatment, then withdrawal from treatment with recurrence of entire picture of esophageal hemorrhage; reversal again after resumption of treatment	Hemorrhage after tooth extraction, recurrent ascites; esophageal hemorrhage; hepatic coma
E. M.	♀	70	Two attacks of icterus in childhood and youth; nonalcoholic; esophageal hemorrhage followed by icterus, edema and ascites 5 mos later; small liver, large spleen; A/G * = 2.05/2.84 = 0.7; sulfobromophthalein excretion 27%; bilirubin 0.8 mg./100 cc.	13	Improved appetite; weight gain; decreased fatigue; no effect on recurrence of ascites; improved tolerance of paracenteses, 16 performed	Intestinal obstruction due to old pelvic adhesion; postoperative death
H. McK.	♂	63	Fatigue, weakness, anorexia and loss of weight for 10 mos; then icterus, abdominal pain, slight ascites and bleeding gums, enlarged liver and spleen; A/G * = 2.72/3.22 = 0.8; sulfobromophthalein excretion 37%; bilirubin 2.4 mg./100 cc.	8	Improved appetite; decreased fatigue	Hepatic failure with coma
M. S.	♀	52	Nonalcoholic; 2 yrs. of severe icterus, diarrhea, loss of weight, anorexia and weakness; 16 mos of ascites, enlarged liver, no benefit from diet and vitamin therapy; frequent fever with elevation of icterus, 17 paracenteses before liver extract therapy	15	Decreased fatigue, improved appetite, loss of ascites, later increased icterus; recurrence of ascites	Hepatic failure with coma
G. T.	♀	42	Chronic alcoholism; icterus, fatigue and anorexia for 3 yrs; ascites for 2 yrs; enlarged liver, edema; A/G * = 3.41/3.17 = 1.1; sulfobromophthalein excretion 35%; bilirubin 1.9 mg./100 cc	18 Irregular therapy	Decreased fatigue, improved appetite, loss of ascites; weight gain	Active alcoholism during treatment; exsanguinating esophageal hemorrhage 4 mos. after withdrawal from therapy and continued alcoholism
D. B.	♂	66	Nonalcoholic; low protein diet by preference; 3 mos. of wasting, icterus and ascites; small liver, large spleen; esophageal varices; A/G * = 2.73/3.25 = 0.8; sulfobromophthalein excretion 21%	16	Improved appetite, decreased fatigue; tolerated 53 paracenteses at weekly intervals throughout treatment; resumed work and survived an esophageal hemorrhage after 3 mos. of therapy and a laparotomy 9 mos later; no change in rate of accumulation of ascites, massive edema for the last year of life	Severe bronchitis with hepatic coma

* A/G, albumin globulin ratio

In this group of patients treated six months or more with intravenous liver extract, 7 deaths occurred (table 9). Two of the 3 cases of biliary cirrhosis are included in this group. In one (F. C.) the association of common duct obstruction due to stone was a material factor in hastening the patient's death. One fatality (E. M.) occurred in a 70 year old woman with ascites in whom there developed a low grade peritonitis which was followed by intestinal obstruction. At surgical intervention massive pelvic adhesions were found to be responsible for the obstruction and were believed to be a result of radiation therapy undertaken twenty years previously for sterility. V. M. died after an elective tooth extraction, which produced massive uncontrolled hemorrhage followed by recurrence of ascites and hepatic coma. G. T. was a moderately active alcoholic addict throughout her irregular treatment period. Despite this, her ascites had been brought under control. Against the advice of the investigators, she withdrew from therapy and continued to drink heavily. Four months later a massive esophageal hemorrhage resulted in exsanguination and death.

It is considered appropriate that at least a six months' trial of therapy be given before the evaluation of a new therapeutic agent for a chronic progressive disease such as cirrhosis, in which the anatomic, biochemical and metabolic defects are so well established by the time decompensation has occurred. Hence, the large group of patients who were treated less than six months is not the subject of analysis in this communication. Since this may effect some selection, it should be reported that in this inadequately treated group there have been 3 deaths shortly after the start of treatment (table 10). Two of these fatalities were due to massive esophageal hemorrhage in patients with numerous previous hemorrhages; in one (E. E.) treated four and a half months, ascites of one year's duration was controlled before death occurred. The third death was due to coronary occlusion and cardiac failure in a patient who had sustained a coronary occlusion one year previously.

There have been a limited number of observations on the effects of withdrawal from intravenous liver extract therapy. Patient V. M. (table 9) established excellent control of edema and ascites after three months of regular therapy and then voluntarily withdrew. The entire picture of hepatic decompensation rapidly recurred and persisted for the treatment-free period of two months. Compensation was again established when treatment was resumed, and it persisted for fourteen months until shortly before death. Five patients have now completed a series of treatments of arbitrary length varying from ten to eighteen months, and they have been followed further for periods varying from four to fifteen months (table 11). Thus far all hav maintained excellent appetite and intake of food and have exhibited no relapses as determined by clinical findings and tests.

COMMENT

In analyzing the effects of therapy in cirrhosis, one is confronted with the appraisal of many factors that do not lend themselves easily to measurement. One such factor is the management of the many minor problems attending long illness. Since the patients whose cases are reported herein were seen in the outpatient department at least twice a week, many of these problems received prompt attention and care, so that periodic medical supervision of a rather elaborate type was available. How important this may have been in influencing the clinical course and final outcome of treatment is difficult to evaluate. In this regard the effect of abstinence from alcohol and the resumption of a normal intake of food in a person previously a heavy drinker is an important consideration. Moreover, since the majority of patients in the group were of moderate financial means, excellent selection could be exercised in planning individual diets, which were maintained at prescribed standards for foods rich in protein and carbohydrate. The importance of these several factors cannot be underestimated, since each represents in itself a partially effective method of treatment. Before unusual merit is claimed for the use of intravenous crude liver extract, it should be emphasized that this form of therapy has been used successfully only in conjunction with a full regimen of treatment.

TABLE 10.—*Fatal Cases of Cirrhosis After Less Than Six Months of Intravenous Liver Extract Treatment*

Patient	Sex	Age	Clinical Data	Duration of Treatment	Cause of Death
B E	♂	58	Chronic alcoholism; 3 esophageal hemorrhages; icterus, ascites; large liver and spleen	6 wks.	4th esophageal hemorrhage; pneumonia
J L	♂	63	2 yrs gastrointestinal distress; coronary occlusion 1 yr. before; mild icterus, 3 mos. of ascites; large liver and spleen	6 wks regular; no therapy 4 wks.; then 6 wks irregular	Coronary occlusion with cardiac failure
E E.	♀	40	Chronic alcoholism over 2½ yrs.; loss of weight and fatigue; 1 yr. of hydrothorax, edema, ascites and icterus; 6 esophageal hemorrhages; laparotomy; 11 paracenteses; large liver and spleen	4½ mos. regular therapy with increasing appetite, weight gain, decreased fatigability and loss of ascites	7th esophageal hemorrhage

TABLE 11.—*Patients with Cirrhosis Who Completed a Series of Intravenous Liver Extract Treatments and Are Now on Treatment-Free Observation Period*

Patient	Sex	Age	Clinical Data	Mos of Therapy	Effect of Therapy	Mos Since Therapy Terminated	Progress
B S †	♂	58	Chronic alcoholic; 1 yr of ascites, icterus, fatigue and anorexia; large liver and spleen; 45 paracenteses anemia; albumin 3.37 Gm. per 100 cc., globulin 2.03 Gm. per 100 cc.; sulfobromophthalein excretion 15%	13	Increased appetite; weight gain; loss of icterus and ascites; restoration of plasma proteins; albumin 4.99 Gm. per 100 cc., globulin 2.54 Gm. per 100 cc., sulfobromophthalein excretion 7%	13	Continued weight gain, no recurrence of ascites or icterus; protein A/G * = 2.0
J M	♂	58	Chronic alcoholic; 3 mos. of icterus and ascites, anorexia and fatigue, enlarged liver; 3 paracenteses, albumin 2.34 Gm. per 100 cc., globulin 2.43 Gm. per 100 cc.; sulfobromophthalein excretion 42%	16	Increased appetite and loss of fatigability, icterus and ascites; albumin 3.50 Gm. per 100 cc., globulin 4.40 Gm. per 100 cc.; sulfobromophthalein excretion 30%	13	Occasional fatigue; no recurrence of icterus or ascites
P J	♂	59	Chronic alcoholic; enlarged liver for 9 yrs.; esophageal hemorrhage 4 mos. before; ascites, icterus, sulfobromophthalein excretion 22%	18	Increased appetite, loss of fatigability, icterus and ascites; decided improvement in tests of liver function	9	No recurrence of icterus or ascites; increased proteins; sulfobromophthalein excretion 5%. protein A/G * = 2.5
M W.	♂	30	Fatigue and anorexia; chronic alcoholism, enlarged liver, 4 mos. of ascites; albumin 3.12 Gm. per 100 cc., globulin 6.32 Gm. per 100 cc.; sulfobromophthalein excretion 60%	10	Increased appetite; loss of fatigability and ascites; albumin 4.65 Gm. per 100 cc., globulin 2.61 Gm. per 100 cc.; sulfobromophthalein excretion 30%	15	No recurrence of ascites or fatigue; protein A/G * = 1.7
R M	♀	16	Nonalcoholic; cirrhosis after hepatitis; anorexia and fatigue; icterus, ascites for 7 mos.; enlarged liver and spleen, albumin 2.18 Gm. per 100 cc., globulin 3.78 Gm. per 100 cc.; sulfobromophthalein excretion 50%; active nonspecific ulcerative colitis	18	Restoration of appetite and strength; loss of fatigability, icterus and ascites, albumin 4.17 Gm. per 100 cc., globulin 2.33 Gm. per 100 cc.; sulfobromophthalein excretion 12.5%	4	No recurrence of icterus or ascites; no relapse in tests of liver function; continued moderate activity of ulcerative colitis

* A/G, albumin globulin ratio † See chart 1

A full diet, properly planned, should be the first consideration, and appetite therefore becomes a prime requisite. In anorexic patients, whose dietary intake has been compromised by alcoholism and chronic disease of the liver, the intravenous use of crude liver extract in large doses is considered to play its major role by encouraging and sustaining appetite. The vigorous use of vitamins, therefore, becomes less important in the patient with an appetite, who is able to eat adequately and derive essential food elements from natural sources.[14]

The clinical vitamin deficiencies should be treated with the appropriate essential substances, but this form of therapy need not be prolonged much beyond the usually brief period necessary to correct the manifestations of such deficiency.

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[14] Reprint and Circular Series no 122, National Research Council, 1946, quoted in Present Status of Vitamin Requirements, Editorial, Am. J. Med. **1:** 447-448 (Oct.) 1946. Wilder, R. M.: Misinterpretation and Misuse of the Recommended Dietary Allowances, Science **101:** 285-288 (March 23) 1945

There is some reason to regard cirrhosis of the liver as an intrinsic deficiency disease, in which faulty metabolism of certain essential components of the diet may give rise to syndromes which resemble deficiency diseases in their outward aspects but, unlike the currently recognized deficiency diseases, do not respond in any striking or specific manner to one or a combination of known vitamins.[15] However, this need not be an indication for the use of B vitamins in exorbitant doses, since the concept of faulty metabolism of vitamins of the B complex group in advanced hepatic insufficiency is based thus far largely on speculation and analogy and awaits convincing laboratory proof. Excellent evidence exists for vitamin A,[16] D [17] and K [18] deficiency, however, and the therapeutist need not hesitate for lack of rationale in supplying these substances when confronted by a patient with chronic hepatic disease who exhibits defective dark adaptation, steatorrhea, osteoporosis or low prothrombin values. That these deficiencies are essentially intrinsic will be realized when complete reversal does not result from appropriate substitution therapy.

So little is known about the complex chemical make-up of intravenous crude liver extract that it would be profitless to attempt to indicate what constituent factors might meet the requirements of a disease involving a multiplicity of intrinsic deficiencies, the majority of which are admittedly ill defined. It is conceivable that factors contained within crude liver extract are directed against intrinsic deficiencies as yet unrecognized. Too little methionine and choline are present in intravenous crude liver extract [19] in comparison to the amounts achieved by dietary intake to attribute to these agents alone the beneficial effects produced. It is of interest that small intramuscular doses of crude liver extract have been utilized in several recent investigations.[20] Other forms of nutritional therapy have proved of value in cirrhosis. A growing experience with injectable human serum albumin solutions has shown that this treatment adjuvant is of unique value in those patients with intractably low plasma protein levels, and especially in those who are unable to achieve positive nitrogen balance.[21]

Rest and freedom from undue physical strain are no less essential than diet, especially during critical periods of hepatic decompensation.[22] It is evident from a consideration of the elementary principles of physiology that rest or restriction of activity at once reduces the functional demands on the liver.

A review of experiences [23] in the treatment of cirrhosis with groups of patients comparable in size to our own has shown the two year survival rate to be approximately 45 per cent when dietary forms of therapy are widely supplemented with vitamins.[20b] By contrast, only 22 per cent [20b] to 25 per cent [24] of untreated control patients survived the first two years after decompensation. A comparable group of patients treated with intravenous liver extract has shown a 65 per cent survival rate at the end of a two year period.[24] The 23 surviving patients in our series represent a survival rate of 77 per cent at the end of the same interval.

In many instances such physical, economic and social rehabilitation was accomplished that it was difficult to compare the state of apparent health during the course of treatment with the previous serious clinical state before therapy. The universal experience of returning appetite in the group, with its desirable effect on the storage of protein and the general nutritional state, argues for the reversal of factors active in the production of hepatic decompensation. While it is not unlikely that liver extract may encourage the regeneration of hepatic tissue and assist in restoring to normal the aberrations of water balance, energy metabolism, vitamin storage and enzyme synthesis known to occur in patients with cirrhosis of the liver, such effects remain to be demonstrated by future work. The role of liver extract most easily ascertained clinically is the effect on appetite. That appetite becomes hearty in previously anorexic patients there is little doubt, and in many cases it develops to almost pathologic vigor. The resultant gain in nutrition and its reflection in bodily economy is undoubtedly of critical value in this form of therapy. It is also impressive that with the return of vigor the decompensated cirrhotic patient is better able to tolerate the vicissitudes of chronic illness.

SUMMARY

1. Thirty patients with decompensated cirrhosis of the liver were treated intravenously two or three times a week for six months or longer with large doses of crude liver extract. The period of observation varied from twenty-one to thirty-eight months, with an average of two years for the group.

2. No strict supervision of diet was undertaken, but withdrawal from alcoholic beverages was insisted on, and the patients were instructed to select foods high in protein and rich in carbohydrate; no foods were prohibited if they were tolerated without distress. Dietary supplements of vitamins and lipotropic agents such as methionine and choline were not used, beyond short term vitamin B therapy for those patients with clinical B avitaminosis.

3. Twenty-one patients were chronic alcoholic addicts, and at least 20 of these had a history of inadequate diet. Five other patients gave a history of icterus in youth. Seven patients had had esophageal hemorrhages, and 21 exhibited edema and ascites before treatment.

4. Throughout the period of observation the clinical progress of the patients was closely followed. Numerous tests of hepatic function and measurements of pertinent blood constituents were performed at frequent intervals.

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[15] Hoagland, C. L.: Therapy of Liver Diseases, Bull. New York Acad. Med. **21:** 537-556 (Oct.) 1945.

[16] Ralli, E. P.; Papper, E.; Paley, K., and Baumann, E.: Vitamin A and Carotene Content of Human Liver in Normal and in Diseased Subjects: An Analysis of One Hundred and Sixteen Human Livers, Arch. Int. Med. **68:** 102-111 (July) 1941. Haig, C. and Patek, A. J.: Vitamin A Deficiency in Laennec's Cirrhosis, J. Clin. Investigation **21:** 309-317 (May) 1942. Adlersberg, D.; Sobotka, H., and Bogatin, B.: Effect of Liver Disease on Vitamin A Metabolism, Gastroenterology **4:** 164-174, (Feb.) 1945.

[17] Lichtman, S. S.: Diseases of the Liver, Gall Bladder and Bile Ducts, Philadelphia, Lea & Febiger, 1942, chap. 14.

[18] Lucia, S. P., and Aggeler, P. M.: The Influence of Liver Damage on the Plasma Prothrombin Concentration and the Response to Vitamin K, Am. J. M. Sc. **201:** 326-340 (March) 1941. Andrus, W. DeW., and Lord, J. W.: Clinical Investigations of Some Factors Causing Prothrombin Deficiencies, Arch. Surg. **41:** 596-606 (Sept.) 1940.

[19] The following analysis of the liver extract prepared according to the Rockefeller formula has been submitted by the Lilly Research Laboratories: thiamine 0.00 mg., riboflavin 0.05 mg., methionine 0.84 mg., choline 3.32 mg., nicotinic acid 0.26 mg., and total nitrogen 21.02 mg., each per cubic centimeter; solids, 21.08 per cent and ash, 7.5 per cent of solids.

[20] (*a*) Snell, A. M.: Recent Advances in the Treatment of Hepatic Disease, Minnesota Med. **23:** 551-556 (Aug.) 1940. (*b*) Patek, A. J.: Dietary Treatment of Laennec's Cirrhosis with Special Reference to Early Stages of the Disease, Bull. New York Acad. Med. **19:** 498-506 (July) 1943. (*c*) Barker, W. H.: The Modern Treatment of Cirrhosis of the Liver, M. Clin. North America **29:** 273-293 (March) 1945. Morrison, L. M.: The Response of Cirrhosis of the Liver to an Intensive Combined Therapy, Ann. Int. Med. **24:** 465-478 (March) 1946.

[21] Kunkel, H. G.; Labby, D. H.; Shank, R. E.; Ahrens, E. H. Jr., and Hoagland, C. L.: The Use of Concentrated Human Serum Albumin Solutions in the Treatment of Cirrhosis of the Liver, to be published.

[22] Kunkel, H. G.; Labby, D. H., and Hoagland, C. L.: Chronic Liver Disease Following Infectious Hepatitis: I. Abnormal Convalescence Following Initial Attack, Ann. Int. Med., to be published.

[23] Labby, D. H.: Treatment of Hepatic Insufficiency, in Cornell Conferences on Therapy, New York, The Macmillan Company, 1947, vol. 2.

[24] Ralli, E. P.: Personal communication to the author.

5. A return of appetite and an increase in caloric intake were found to be early signs of improvement and were eventually experienced by all patients. A gain in body weight and control of tissue wasting resulted.

6. In 12 of the 21 patients with ascites there was complete disappearance of ascites within two to twelve months after the start of therapy. In 7 patients the frequency of paracenteses was materially reduced, and in 2 there was failure to influence the rate at which ascites reaccumulated. It was believed that because of the return of appetite and the improvement in nutrition and vigor after therapy the patients were better able to tolerate paracenteses, whenever this procedure became necessary.

7. Improvement in the serum protein and bilirubin levels, as well as in sulfobromophthalein retention and other constituents of the blood and tests of liver function, was observed during the course of treatment.

8. Twenty-three patients, or 77 per cent of the group, have survived two years or more. Five patients treated from ten to eighteen months have been placed on treatment-free observation periods varying from four to fifteen months; none of these has shown detectable clinical or biochemical relapse.

9. On the basis of these observations it is believed that one of the effects of crude liver extract administered in large doses intravenously is to restore and sustain appetite in previously anorexic patients with cirrhosis. Used in conjunction with a full diet, a great nutritional advantage is gained which results in the control of wasting and the restoration of protein storage.

PROPYLTHIOURACIL IN THYROTOXICOSIS

Observations on Fifty-Four Patients

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Propylthiouracil has been recommended by Astwood and VanderLaan[1] as an effective substitute for thiouracil. Its antithyroid action in rats is approximately ten times that of thiouracil, and while it is more toxic than the latter on a weight basis, it is less toxic in quantities having a comparable therapeutic effect.

Clinical observations on the first 52 patients treated[1] point out that with few exceptions, 50 to 75 mg. propylthiouracil a day is an adequate initial dose, while 25 to 50 mg. a day is sufficient for maintenance. The antithyroid action is less intense than that of thiouracil; myxedema and thyroid enlargement have occurred only infrequently, and side reactions, not at all. From this study it appears that the new drug has approximately five times the activity of thiouracil, with few if any of the obstacles presented by the latter.

Fifty-four patients have been treated with propylthiouracil by me during a period of four months. Among 18 of these who had not received previous treatment, 13 (7 women and 6 men) had toxic nodular goiter and 5 (4 women and 1 man) had toxic diffuse goiter.

Thirty-seven patients still on varying maintenance doses of thiouracil were given the new agent instead. Of these, 22 (17 women and 5 men) had toxic nodular goiter and 14 (10 women and 4 men) had toxic diffuse goiter.

Five patients who had been unable to take thiouracil because of drug fever or urticaria were also included in the study. Three of these had toxic nodular goiter, 1 had toxic diffuse goiter and 1 had essential hypertension with normal thyroid function.

RESULTS IN PREVIOUSLY UNTREATED PATIENTS

Ten patients with toxic nodular goiter responded to the drug with an abatement of symptoms, gain in weight and lowering of the basal metabolic rate within four weeks on doses of 50 to 150 mg. a day.

Three of this group requiring only 50 mg. of the drug a day showed a drop in the basal metabolic rate from plus 15 to minus 12, plus 20 to plus 6 and plus 9 to minus 2 per cent. One patient died of acute myocardial infarction at the end of one month, but the other 2 have been maintained for three and two months, respectively, on the same dose.

Four of this group required 75 mg. of propylthiouracil per day. The basal metabolic rate of 1 changed from plus 27 to minus 11, 1 from plus 12 to minus 6, the third from plus 15 to minus 8 and the fourth from plus 41 to zero per cent. The first and second patients have required the same dose for maintenance, the symptoms of the third have been controlled with 50 mg. a day but the dosage of the fourth has been increased to 150 mg. a day.

In 2 patients control was achieved on 100 mg. of the drug daily, 1 showing a drop from plus 27 to plus 5, the other from plus 11 to minus 4 per cent. Both have required the same dose during three months and one month, respectively.

One patient with an initial basal metabolic rate of plus 12 per cent was given 150 mg. of the agent daily. In two weeks the improvement was decided, with the basal metabolic rate down to minus 5 per cent. This level was maintained during the following month on 75 mg. a day.

The symptoms of 3 patients have not been fully controlled in two to three months of treatment. Symptomatic improvement with gain in weight has occurred, but the expected drop in the basal metabolic rate has not followed:

One patient with an initial rate of plus 50 per cent was given 75 mg. of the drug daily for sixty-three days, with depression of the basal metabolic rate to plus 30, plus 31 and plus 29 per cent. The dosage was increased every two weeks to a present level of 200 mg. a day. No reduction in the basal metabolic rate followed after two weeks at this dosage level.

The second patient was cautiously started on a dosage of 25 mg. a day because drug fever had developed when she was taking thiouracil. The initial basal metabolic rate of plus 15 per cent has moved to plus 18 per cent during three months in which the dose was being slowly increased to 75 mg. propylthiouracil daily.

The third patient started with a basal metabolic rate of plus 21 per cent, which remained unchanged on 75 mg. of the drug a day for four weeks, 100 mg. for two weeks and 150 mg. for two more weeks.

It is perhaps significant that these 3 patients were between 60 and 70 years of age and they had had nodular thyroids for several years, factors which would make for slow response to treatment.

Of the 5 patients with toxic diffuse goiter, 1 showed improvement in four weeks, the basal metabolic rate moving from plus 11 to minus 4 per cent on 75 mg. of the agent daily, with maintenance on 50 mg. a day during the subsequent month.

From the Department of Medicine, Harper Hospital and Wayne University College of Medicine.

[illegible] was supplied by Dr. Stanton M. Hardy, Lederle [illegible] River, N. Y.

[1] [illegible] and VanderLaan, W. P.: Thiouracil Derivatives of Greater Activity for the Treatment of Hyperthyroidism, J. Clin. Endocrinol. 5:424 (Dec.) 1945.

In a second patient with basal metabolic rate of plus 12 per cent, the rate showed no change during sixty-five days on a dosage of 75 mg. daily, then dropped to minus 2 per cent after two weeks on 100 mg. of the drug a day.

In a third patient with recurrent hyperthyroidism drug fever developed after forty-one days' treatment.

A fourth patient with diabetes and recurrent hyperthyroidism showed an increase of the basal metabolic rate to plus 25 per cent after two weeks on a dosage of 75 mg. propylthiouracil a day, then dropped to plus 7 per cent after two weeks on 100 mg. a day. When the rate increased to plus 10 per cent in another two weeks the dose was increased to the present level of 150 mg. daily. No improvement in the diabetes has been observed.

The fifth patient, a Negro man aged 40 with a fulminating thyrotoxicosis, improved symptomatically during the first five weeks of treatment with 75 mg. a day, but the basal metabolic rate did not change from the initial plus 41 per cent. There was an increase in the rate to plus 53 per cent during the next two weeks on 100 mg. of the drug a day. A drop to plus 24 per cent and a gain in weight of 4 pounds (1.8 Kg.) occurred during the next two weeks on a dosage of 150 mg. a day.

In this small group the 2 patients with a mild form of the disease responded relatively promptly to a dosage of 75 to 100 mg. propylthiouracil daily. The 2 with a more severe disturbance are still not fully controlled on 150 mg. of the drug a day.

In summary, 10 patients with toxic nodular goiter and 2 with toxic diffuse goiter responded to treatment within four weeks on dosages of 50 to 150 mg. of the drug daily and have maintained their gains. The symptoms of 3 with toxic nodular and 2 with toxic diffuse goiter have not yet been fully controlled over a period up to three months on present doses between 75 and 200 mg. daily. These results are not to be classed as failures, since the patients have not been treated long enough.

RESULTS OF THE SUBSTITUTION OF PROPYLTHIOURACIL FOR THIOURACIL

A group of 22 patients with toxic nodular goiter (17 women, 5 men) and 14 with toxic diffuse goiter (10 women, 4 men) had been on daily maintenance doses of thiouracil ranging from 100 to 400 mg. for from one to eighteen months. To compare the effective maintenance doses and to determine the relative potencies of thiouracil and propylthiouracil, the latter was substituted in the treatment of these patients. Astwood's recommended average maintenance dose of between 25 and 50 mg. compared with the average maintenance dose of 100 to 300 mg. thiouracil yields an approximate equivalent of 25 mg. of the former for 100 mg. of the latter. Changes in medication were made on this basis, the initial dose being 25 mg. propylthiouracil a day, with increases made only when indicated.

Of the 22 patients with toxic nodular goiter, 16 who required 100 to 200 mg. thiouracil have remained as well controlled on an average of 35 mg. propylthiouracil for each 100 mg. thiouracil. Six patients formerly given 200 to 300 mg. thiouracil have not been as well controlled on an average of 33 mg. of the new agent per 100 mg. thiouracil.

Seven of the group in which toxic diffuse goiter was controlled by 100 to 200 mg. thiouracil did as well on an average of 29 mg. of the new drug for each 100 mg. of thiouracil. Symptoms of the remaining 7 patients who required from 100 to 400 mg. thiouracil were not adequately controlled with an average of 30 mg. propylthiouracil substituted for each 100 mg. thiouracil.

In 23 of the 36 patients control was adequate when an average of 32 mg. propylthiouracil was substituted for each 100 mg. thiouracil, while in the remainder inadequate control followed the use of 31.5 mg. of derivative drug. Accordingly, somewhat more than 32 mg. of the new drug appears to be the equivalent of 100 mg. thiouracil for suitable maintenance. For the initiation of treatment a dose of 128 to 192 mg. propylthiouracil should be equivalent to the average starting dose of 400 to 600 mg. thiouracil, giving the new drug a potency value three times that of thiouracil.

TOXICITY

A group of 5 patients unable to take thiouracil because of toxic reactions was started on propylthiouracil. Four had had typical attacks of drug fever, which cleared when administration of the drug was stopped and recurred when it was resumed. In the fifth there had developed urticaria, which behaved similarly in relation to the drug. Three patients had been taking 300 mg. thiouracil a day and 2 patients 600 mg. before the initial attack.

All these patients have now been taking propylthiouracil for four months without any sort of reaction. In 2 the hyperthyroidism is controlled by 50 mg. of the drug daily; in one, by 75 mg. daily, and in the fourth control has not yet been achieved with 75 mg. daily. The fifth patient, who has essential hypertension, is taking 150 mg. a day without difficulty.

It appears that patients who have been unable to take thiouracil are capable of handling propylthiouracil successfully. However, the new drug has toxic potentialities of its own, as demonstrated by the following instance of drug fever.

In a white woman aged 51, who had had a thyroidectomy in 1922, there developed recurrent hyperthyroidism with tachycardia, loss in weight, tremor, blood pressure of 160 systolic and 90 diastolic and a basal metabolic rate of plus 20 per cent. For many years she had suffered from "rose fever" and had been allergic to many substances. On April 23, 1946 she was started on 25 mg. propylthiouracil three times a day. Nausea developed two days later and recurred intermittently during the next four weeks. On May 21 the symptoms had improved only slightly and the basal metabolic rate was still plus 19 per cent, so the dosage was increased to 100 mg. of the drug daily. On May 29 the nausea was worse, and on June 3, forty-one days after the start of treatment, there developed headache, chills, sore throat and a fever of 103 F. The leukocyte count was 12,000, with the polymorphonuclears 70 per cent. Administration of the drug was stopped, and the attack subsided within three days. One week later treatment with the drug was resumed, and four hours after administration of the second 25 mg. tablet there was recurrence of the chills, aching, sore throat and fever. The attack subsided promptly, and no more of the drug was given.

Evidence of toxic effect on the blood or blood-forming tissues has not been noted in this series of patients. Blood counts were at first performed every week, then every two to four weeks. In no instance was there leukopenia, granulocytopenia or anemia.

COMMENT

The experience in treating 54 patients with propylthiouracil coincides in many respects with that of Astwood. Positive antithyroid action was observed, and instances of myxedema or thyroid enlargement did not occur. However, the inability to bring the symptoms of nearly all the patients under control within a period comparable to that experienced with thiouracil may be attributed to too low dosage of the new drug. This should not detract from the antithyroid value of propylthiouracil for it must be recognized that because of its demonstrated potency in rats as ten times that of thiouracil, cautious use in human beings was clearly prescribed. Under the circumstances, a small initial dose, to be increased as indicated, seemed both safe and logical, even though it might postpone the desired control. This approach is exactly the opposite to that used with thiouracil, in which the direction was from a maximal toward a minimal dose, and may well account for the seeming difference in action.

Comparison of the control achieved by the two drugs in a group of patients formerly controlled with thiouracil and transferred to propylthiouracil indicates that it is necessary to use at least 32 mg. of the new drug to achieve the same action as that of 100 mg. of the old. Thus one may assign to propylthiouracil a potency value in man three times that of thiouracil, with the optimal initial dose between 120 and 190 mg. of the drug.

Of particular interest is the observation that 5 patients for whom thiouracil was toxic are able to take the new drug without difficulty. However, propylthiouracil has toxic potentialities of its own, for in 1 patient in the series there developed typical drug fever. While there were no other toxic reactions in this series it does not follow that these may not occur with the administration of larger doses of the drug.

Of the two antithyroid drugs, propylthiouracil, though its action is slower at present dosage levels, is much safer than thiouracil. While faster action may follow larger doses, toxic reactions may also occur, for propylthiouracil is still the more powerful of the two drugs.

SUMMARY

In a group of 18 previously untreated patients with thyrotoxicosis, 11 responded with abatement of symptoms, gain in weight and return of the basal metabolic rate to normal within four weeks on a dosage of propylthiouracil ranging from 50 to 150 mg. a day. One patient responded after 11 weeks' treatment, and in 1 drug fever developed after forty-one days. Five patients showed varying degrees of response just short of complete control because of too low dosage.

Thirty-six patients on maintenance doses of thiouracil were given propylthiouracil instead. The disease of 23 continued under satisfactory control while that of 13 was not controlled as well, again because of too low dosage. Apparently it takes at least 32 mg. of the new drug to match the effect of 100 mg. thiouracil, which would make the potency of the former three times that of the latter. An effective initial dosage comparable to 400 to 600 mg. thiouracil should accordingly be 120 to 190 mg. propylthiouracil daily.

Five patients unable to take thiouracil because of toxic reactions did not experience difficulty with the new drug.

In 1 patient there developed typical drug fever, but no other toxic reactions appeared in the rest of the group.

Propylthiouracil is a potent antithyroid agent fully as effective and much safer than thiouracil, although it is not incapable of producing toxic reaction.

TYPHUS FEVER IN THE UNITED STATES ARMY FOLLOWING IMMUNIZATION

Incidence, Severity of the Disease, Modification of the Clinical Course and Serologic Diagnosis

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Entry of the United States into World War II with exposure of our troops to epidemic (louse-borne) typhus fever in many parts of the world called for the use of adequate protective measures against this disease. One important aspect of this protection was the compulsory immunization with typhus vaccine of all soldiers going to or stationed in areas where epidemic typhus was present.

The purpose of this paper is to report on the excellent protection afforded the personnel of the United States Army by this prophylactic immunization, to record in a limited number of cases in which adequate clinical records have been collected the severity of the disease and the modification of the clinical course and to discuss methods of serologic diagnosis in those persons who contracted epidemic typhus subsequent to vaccination. The incidence of typhus fever in the entire United States Army during the war years, 1942 to 1946 inclusive, is also reported.

EPIDEMIC TYPHUS VACCINE

Subsequent to the demonstration by Ricketts [1] almost forty years ago of micro-organisms which now bear his name, the study of rickettsial diseases has received increasing attention. Since these diseases in man are usually serious and not infrequently fatal, it is not surprising that many investigations have been directed toward the production of prophylactic vaccines,[2] particularly for epidemic typhus fever.

It was early appreciated that persons recovering from these infections exhibited evidence of considerable immunity to subsequent reinfection, and efforts were therefore made, in the absence of adequate protection from killed vaccines, to produce a subclinical or modified infection with the causative organisms. The record of the use of living epidemic typhus vaccine presents a series of frank failures. Investigations based on the use of attenuated murine strains likewise led to results of doubtful value. Satisfactory immunity was developed only at the price and risk of the development in a patient of an active infection with murine typhus. Some patients died; this danger together with other dangers of the use of a living vaccine have been pointed out.[3]

With the growing realization of the dangers of the use of living vaccines, increasing efforts were directed toward the study of killed vaccines. The early work of da Rocha-Lima [4] and Weigl [5] on the use of killed suspensions of infected lice or infected feces of lice indicated that favorable results might be attained. These meth-

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From the United States of America Typhus Commission, War Department, Washington 25, D. C.

[1] Ricketts, J.: A Micro-Organism Which Apparently Has a Specific Relationship to Rocky Mountain Spotted Fever: A Preliminary Report, J. A. M. A. **52:** 379 (Jan. 30) 1909.

[2] Murgatroyd, F.: A Review of Immunization Against Human Rickettsial Diseases, Tr. Roy. Soc. Trop. Med. & Hyg. **34:** 1 (June) 1940. Biraud, Y.: The Present Menace of Typhus Fever in Europe and the Means of Combating It, Bull. Health Organ., League of Nations **10:** 1, 1943.

[3] Dyer, R. E.: The Menace of Typhus in Europe, J. A. M. A. **122:** 828 (July 17) 1943. Sadusk, J. F., Jr., and Kuhlenbeck, H.: Dangers Associated with the Use of Living "Attenuated" Typhus Vaccine, Am. J. Pub. Health **36:** 1027 (Sept.) 1946.

[4] da Rocha-Lima, H.: Schutzimpfungsversuche gegen Fleckfieber, München. med. Wchnschr. **65:** 1454, 1918.

[5] Weigl, R.: Untersuchungen und Experimente an Fleckfieberlaüsen: *Die Technik der Rickettsia Forschung, Beitr. z.* Klin. d. Infektionskr. **8:** 353, 1920.

ods, together with the use of other procedures such as suspensions of organisms obtained from the peritoneal cavity of the rat[6] or from rodent lungs,[7] were not, however, practical for large scale immunization.

Subsequent to the studies of Cox[8] in 1938, which demonstrated that rickettsias of the Rocky Mountain spotted fever and typhus groups could be grown in the yolk sac membranes of the developing chick embryo, Cox and Bell[9] in 1940 prepared an epidemic typhus vaccine based on the use of this tissue as a culture medium. This vaccine, which consisted of a killed suspension of Rickettsia prowazeki grown in the yolk sac membrane of the chick and purified by centrifugation, protected guinea pigs against challenge with the virus. Subsequent modifications, such as Craigie's[10] ether extraction and the inclusion of a so-called soluble antigen,[11] led to a vaccine that was satisfactory not only from the point of view of potency but also from the aspect of commercial production. Indeed, production in biologic houses in the United States during the World War II years reached as high as 75,000,000 cc. per year.

The epidemic typhus vaccine used by the United States Army consists of a 10 per cent yolk sac suspension of the Breinl strain of R. prowazeki extracted with ether. The vaccine contains both rickettsial bodies and soluble antigen.

Since early 1942 all United States Army personnel going to or stationed in areas in which epidemic typhus fever is present have received this vaccine. Until the fall of 1943 the initial vaccination consisted of three injections of typhus vaccine, 1.0 cc. each, administered subcutaneously at an interval of from seven to ten days, with stimulating or booster doses being given every six months in endemic areas. With increase in potency due to improvements in production, the initial immunization series was reduced in mid 1944 to two doses of vaccine and the stimulating dose was given at the beginning and in the middle of the typhus season (November 1 and February 1 in the northern hemisphere).

INCIDENCE AND MORTALITY OF TYPHUS FEVER

Official reports of communicable diseases which all Army organizations are required to make to the War Department through appropriate channels do not differentiate between the various members of the typhus group. Epidemic typhus, murine typhus and scrub typhus (tsutsugamushi fever) are included in these reports under the general term of typhus fever. It is possible, however, to obtain figures of a reasonable degree of accuracy for these specific diseases by grouping the cases under one of the three members of the typhus-like group according to geographic locality. For instance, it is evident that all cases of typhus fever contracted in and reported from the continental United States are murine typhus. Likewise, from epidemiologic data and detailed studies of case records, it is reasonable to suppose that cases of typhus fever reported from the Southwest Pacific and China-Burma-India areas are tsutsugamushi fever, although it is possible that a small number of these cases may actually be murine typhus. On a similar basis, cases reported from the European, Mediterranean and Africa-Middle East theaters fall into the epidemic typhus group.

In table 1 are recorded the official War Department figures[12] for typhus fever in the entire United States Army during the period Jan. 1, 1942 to Dec. 31, 1945. These figures are expressed in cases per year and in admission rates per 1,000 per year. On the right side of the table are given the total number of cases for the 1942 to 1945 period of epidemic typhus, murine typhus, and tsutsugamushi fever. It is believed that these data are reasonably accurate.

From table 1 it can be seen that there were 64 cases of epidemic typhus, 603 of murine typhus and 6,685 of tsutsugamushi fever reported in the Army for the war years, 1942 to 1945 inclusive.

When the repeated exposure of American troops is considered it is remarkable that there were only 64 cases of epidemic typhus. However, this low incidence of epidemic typhus cannot be necessarily attributed to prophylactic immunization with typhus vaccine because other methods of protection (notably the use of insecticide powders such as MYL powder consisting of 0.2 per cent pyrethrins, 2 per cent N-isobutylundecylenamide, 2 per cent 2,4-dinitroanisole, and 0.25 per

TABLE 1.—*Incidence of Typhus Fever in the United States Army, 1942 to 1945, Expressed in Cases per Year and in Admission Rates per 1,000 per Year*

	Typhus Fever										Total 1942 1945					
	1942		1943		1944		1945		Total 1942 1945		Epidemic Typhus		Murine Typhus		Tsutsugamushi Fever	
Area	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
United States	40	0.02	128	0.03	162	0.04	84	0.03	414	0.03		.	414	0.03	...	.
European theater	0	0	1	0	0	0	27	0.01	28	0.01	28	0.01	. .	. ..		. .
Southwest Pacific	34	0.51	935	4.79	4,396	7.93	353	0.39	5,718	3.34	..	...	...	. .	5,718	3.34
China Burma-India	0	0	56	1.22	610	3.82	301	1.35	967	2.23	..	....	...	....	967	2.23
North America	0	0	0	0	0	0	0	0	0	0	..	. .	. .	. .	...	. ..
Alaska	0	0	0	0	0	0	0	0	0	0	..	...	.		...	. ..
Latin America	3	0.03	0	0	4	0.05	6	0.08	13	0.03	..	....	13	0.03	...	....
Mediterranean theater	2	0.09	9	0.02	4	0.01	2	0.01	17	0.01	17	0.01	.		...	....
Africa Middle East	2	0.35	15	0.28	2	0.10	0	0	19	0.13	19	0.13		.	...	... .
Pacific Ocean area	16	0.11	76	0.26	65	0.16	19	0.06	176	0.15	..	..	176	0.15	.	.
Total U. S Army, 1942 1945	97	0.03	1,220	0.18	5,243	0.70	792	0.11	7,352	0.30	64	0.003	603	0.025	6,685	0.27

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[6] Zinsser, H., and Castaneda, M. R.: A Method of Obtaining Large Amounts of Rickettsia Prowazeki by X-Ray Radiation of Rats, Proc. Soc. Exper. Biol. & Med. **29:** 840 (April) 1932.

[7] Castaneda, M. R.: Experimental Pneumonia Produced by Typhus Rickettsiae, Am. J. Path. **15:** 467 (July) 1939. Durand, P., and Giroud, P.: Essais de vaccination contre le typhus historique au moyen de Rickettsias tuees par le formol (souches pulmonaires), Arch. Inst. Pasteur de Tunis **29:** 25 (March) 1940.

[8] Cox, H. R.: Use of Yolk Sac of Developing Chick Embryo as Medium for Growing Rickettsiae of Rocky Mountain Spotted Fever and Typhus Groups, Pub. Health Rep. **53:** 2241 (Dec. 23) 1938.

[9] Cox, H. R., and Bell, E. J.: Epidemic and Endemic Typhus: Protective Value for Guinea Pigs of Vaccines Prepared from Infected Tissues of the Developing Chick Embryo, Pub. Health Rep. **55:** 110 (Jan. 19) 1940.

[10] Craigie, J.: Application and Control of Ethyl Ether-Water Interface Effects to the Separation of Rickettsiae from Yolk Sac Suspensions, Canad. J. Research, Sect. E **23:** 104 (June) 1945.

[11] Plotz, H.: Report on the Testing of Four Different Typhus Vaccines in Guinea Pigs, to the Director, Army Medical School, Army Medical Center, Washington, D. C., March 20, 1942. Topping, N. H., and Shear, M. J.: Studies of Antigens in Infected Yolk Sacs, in Topping, N. H., and others: Studies of Typhus Fever, National Institute of Health Bulletin 183, Federal Security Agency, United States Public Health Service, 1945, p. 13.

[12] The Medical Statistics Division, Office of the Surgeon General, War Department, Washington, D. C., supplied the basic data from which table 1 was compiled.

cent of a mixture of isopropyl and diisopropyl cresols, in an inert diluent such as pyrophyllite and DDT powder [4,4′-dichlorodiphenyltrichloroethane] to prevent lousiness) were routinely employed. The question of whether or not vaccine will effectively reduce the incidence of epidemic typhus has not been conclusively demonstrated because of the difficulty of setting up an adequately controlled experiment in a human population on a large scale.

There are certain recent studies, however, which indicate that typhus vaccine prepared from the yolk sac membrane of the embryonated chicken egg will prevent or at least materially reduce the incidence of naturally acquired epidemic typhus. The results of the studies of Stuart-Harris[13] and Sachs[14] on typhus in the British Army suggest that reduction in incidence is effected by such immunization. Gilliam,[15] in a recently reported analysis of the effect of Cox type vaccine in preventing epidemic typhus fever among employees of the Cairo Fever Hospital at El Abbasa, Egypt, during the period from January to June, 1943, presents evidence which again suggests that adequate vaccination affords protection against a subsequent attack of louse-borne typhus.

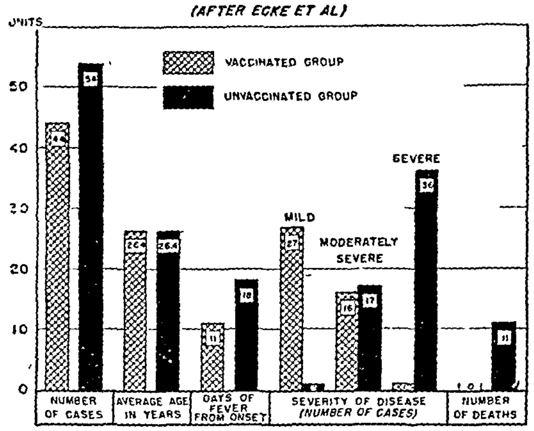

Chart 1.—Graphic representation of the clinical comparison of vaccinated and unvaccinated groups of typhus fever cases among employees of the Cairo Fever Hospital (after Ecke, Gilliam, Snyder, Yeomans, Zarafonetis and Murray[16d]).

On the other hand, there is universal agreement as to the effect of such immunization in reducing the case fatality rate.[16] In a carefully controlled investigation carried out among vaccinated and unvaccinated employees of the Cairo Fever Hospital, Ecke and his colleagues[16d] demonstrated a remarkable difference in not only the case fatality rate but also the clinical severity of the disease. They contrasted a group of 44 cases of epidemic typhus occurring subsequent to immunization with Cox type vaccine with a control group of 54 cases of typhus occurring without benefit of such prophylactic immunization; there were no deaths among the vaccinated group, but in the unvaccinated group there were 11 deaths. As to the severity of the disease, there were 27 cases classified as mild and 1 case classified as severe in the vaccinated group; in striking contrast to this, in the unvaccinated group there was only 1 case classified as mild and there were 36 cases classified as severe. There were 16 cases in the vaccinated group and 17 cases in the unvaccinated group which were classified as moderately severe. The average age of patients in both groups was 26.4 years. These facts are graphically illustrated in chart 1.

Both Stuart-Harris[13] and Sachs[14] reported a considerable reduction in mortality from epidemic typhus in the British Army following the institution of prophylactic immunization. Their reports show that the case fatality rate dropped to less than half the rate observed prior to immunization.

In the American Army there has not been a single death from epidemic typhus reported to the War Department during the period 1942 to 1945. This fact is perhaps the most striking observation made in this report and can be ascribed to prophylactic immunization with the Cox type of ether-extracted typhus vaccine. In my opinion the case fatality rate from epidemic typhus should be practically nil when adequate prophylactic immunization with this type of vaccine is practiced.

There is no evidence to indicate that epidemic typhus vaccine confers substantial immunity against infection with murine typhus in the human subject.

REPORT OF CASES

Adequate clinical records or abstracts of 5 cases were obtained and are briefly reported here. Clinical data pertaining to these cases are summarized in table 2, and serologic findings and typhus immunization records are recorded in table 3. It is hoped that a subsequent analysis of additional cases may be reported at a later date when clinical records have been collected from overseas and appropriately filed.

Case 1.—A man aged 41, an officer and a member of the United States of America Typhus Commission, was engaged in typhus research work in Cairo, Egypt, with another officer (case 2) for almost a month before the onset of disease. They were both daily exposed to infection with typhus by examining patients, picking infected lice off rabbits and patients and handling and grinding infected louse feces for injection into experimental animals. In the preceding two years this officer had received a total of 22.0 cc. of vaccine in single 1.0 cc. doses. Five cubic centimeters of this vaccine was of an experimental lot and contained both epidemic and murine virus. The last dose of vaccine was received on March 1, 1944. The result of serologic examination prior to infection was as follows: on March 21 and April 4, 1944 the Weil-Felix reaction was negative but complement fixation was 1:8 with epidemic antigen and 1:4 with murine antigen.

On May 22, 1944 the patient experienced a mild headache and general malaise and felt feverish. Although the headache became severer and the temperature ranged between 100 and 101 F. during the next three days, he continued with his typhus research activities. On the fifth day, May 26, he took to his bed because of headache, fatigue and malaise. His backache was intense. The next day he reported to a medical dispensary; physical examination revealed a few pink papules on the left palm and wrist, a temperature of 99.2 F. and a pulse rate of 100. The rash had disappeared by the following morning, and except for a mild headache, anorexia and sense of fatigue the patient did well on rest in bed in his quarters, reporting daily to the dispensary. He was afebrile by May 28 and was permitted to remain out of bed on May 31.

Prior to the onset of typhus, the Weil-Felix reaction was negative with both Proteus OX 19 and OX 2 antigens and the complement fixation titer was 1:8 with epidemic antigen

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[13] Stuart-Harris, C. H.: Discussion on the Control of Rickettsial Infections, Proc. Roy. Soc. Med. **38:** 511 (July) 1945.

[14] Sachs, A.: Typhus Fever in Iran and Iraq, 1942-43: A Report on 3,859 Cases, J. Roy. Army M. Corps **86:** 1 (Jan.) 1946.

[15] Gilliam, A. G.: Efficacy of Cox-Type Vaccine in the Prevention of Naturally Acquired Louse-Borne Typhus Fever, Am. J. Hyg. **44:** 401 (Nov.) 1946.

[16] (*a*) Gold, H., and Fitzpatrick, F.: Typhus Fever in a Previously Vaccinated Laboratory Worker, J. A. M. A. **119:** 1415 (Aug. 22) 1942. (*b*) Ding, E.: Ueber die Schutzwirkung verschiedener Fleckfieberimpfstoffe beim Menschen und den Fleckfieberverlauf nach Schutzimpfung, Ztschr. f. Hyg. u. Infektionskr. **124:** 670 (June) 1943. (*c*) Topping, N. H.: Typhus Fever: A Note on the Severity of the Disease Among Unvaccinated and Vaccinated Laboratory Personnel at the National Institute of Health, Am. J. Trop. Med. **24:** 56 (March) 1944. (*d*) Ecke, R. S.; Gilliam, A. G.; Snyder, J. C.; Yeomans, A.; Zarafonetis, C. J., and Murray, E. S.: The Effect of Cox-Type Vaccine on Louse-Borne Typhus Fever: An Account of Sixty-One Cases of Naturally Occurring Typhus Fever in Patients Who Had Previously Received One or More Injections of Cox-Type Vaccine, ibid. **25:** 447 (Nov.) 1945. (*e*) Stuart-Harris.[13] Sachs.[14]

Table 2.—*Clinical Summary of Five Cases of Epidemic Typhus Fever Incurred Subsequent to Immunization with Typhus Fever Vaccine*

			Typhus Vaccine														
Case	Age	Sex	Total, Cc.	Date of First Dose	Date of Last Dose	Date of Onset of Disease	Probable Manner of Infection	Incubation Period, Days	Where Treated	Severity of Illness	Days of Fever from Onset	Days in Bed	Rash	Headache	Confusion	Delirium	White Blood Cell Count
1	41	♂	22.0	3/21/42	3/ 1/44	5/22/44	Laboratory, pulmonary inhalation	Less than 17	Quarters	Mild	6	3	+	++	—	—	
2	35	♂	14.0	12/23/42	4/10/44	6/23/44	Laboratory, pulmonary inhalation	? 12	Hospital	Moderately severe	10	10	++	+++	±	—	6,300; 5,000
3	36	♂	6.0	2/17/44	10/ 1/45	11/22/45	Field, pulmonary inhalation	13	Quarters	Mild	9	5	—	+++	—	—	5,000; 6,000
4	32	♂	3.0	4/25/44	5/ 9/44	4/ 2/45	Field, pulmonary inhalation	10	Hospital	Moderately severe	11	11	+++	+++	—	—	7,000; 8,000
5	45	♂	9.5	8/ ?/44	3/22/45	4/ 2/45	Field, pulmonary inhalation	10	Quarters	Mild	12	5	—	+++	—	—	

Table 3.—*Serologic Observations and Immunization Record in Five Cases of Epidemic Typhus Fever Incurred Subsequent to Immunization with Typhus Fever Vaccine*

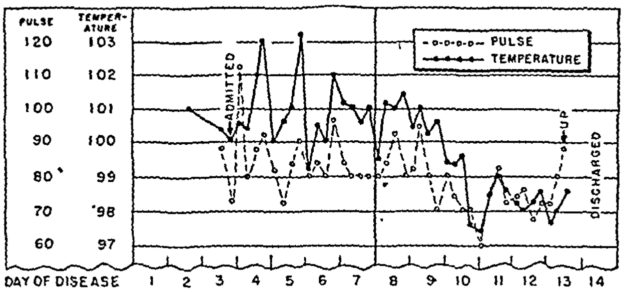
	Typhus Vaccine *				Weil-Felix			Serologic Data: Complement Fixation		Rickettsial Agglutination	
Case	Date	Amount, Cc.	Date of Serum Specimen	Day of Disease	OX 19	OX 2	OX K	Epidemic	Murine	Epidemic	Murine
1	2/21/42 to 3/1/44	21.0 †									
		1.0	3/21/44	—61	—	—	..	1:8	1:4	.....	.....
			4/ 4/44	—47	—	—	..	1:8	1:4	.....	.....
			5/27/44	7	1:20	—	..	1:256	1:128	.....	.....
			5/31/44	9	1:80	—	..	1:1,024	1:256	.....	.....
			6/ 6/44	15	1:20	—	..	1:512	1:128	.....	.....
			6/10/44	19	1:20	—	..	1:512	1:256	.....	.....
			6/13/44	22	1:20	—	..	1:512	1:256	.....	.....
			6/17/44	26	—	—	..	1:512	1:128	.....	.....
			6/21/44	30	—	—	..	1:512	1:128	.....	.....
			6/24/44	33	—	—	..	1:512	1:128	.....	.....
			6/28/44	37	—	—	..	1:512	1:128	.....	.....
			7/ 4/44	43	—	—	..	1:256	1:128	.....	.....
			7/23/44	62	—	—	..	1:256	1:64	.....	.....
			8/ 3/44	73	—	—	..	1:256	1:32	.....	.....
			8/29/44	99	—	—	..	1:64	1:16	.....	.....
			9/16/44	117	—	—	..	1:64	1:16	.....	.....
			9/25/46	644	..	..	..	1:10	—	.....	.....
2	12/23/41 to 10/10/43	12.0									
	11/22/43	1.0									
			4/ 7/44	—78	—	—	—	1:8	—	.....	.....
	4/10/44	1.0									
			4/21/44	—64	—	—	—	1:8	—	.....	.....
			6/24/44	2	—	—	—	1:8	—	.....	.....
			6/25/44	3	—	—	—	1:8	—	.....	.....
			6/26/44	4	—	—	—	1:8	—	.....	.....
			6/30/44	8	1:20	—	..	1:128	1:8	.....	.....
			7/ 2/44	10	1:80	—	..	1:128	1:32	.....	.....
			7/ 4/44	12	1:160	1:40	..	1:256	1:32	.....	.....
			7/ 6/44	14	1:640	—	..	1:256	1:64	.....	.....
			7/11/44	19	1:1,280	—	..	1:512	1:64	.....	.....
			7/23/44	31	1:640	1:40	..	1:512	1:64	.....	.....
			8/29/44	68	1:160	—	..	1:128	1:32	.....	.....
			10/24/44	124	1:80	—	..	1:128	1:16	.....	.....
			2/ 7/46	594	—	—	..	1:20	—	—	—
3	2/17/44 to 7/28/44	4.0									
	5/ 9/45	1.0									
			6/ 6/45	—169	—	—	—	1:10	—	1:40	—
			8/ 4/45	—110	—	—	—	1:10	—	1:40	—
	10/ 1/45	1.0									
			11/28/45	7	1:40	—	..	1:40	—	1:40	—
			12/ 5/45	14	1:80	—	..	1:640	1:160	1:640	1:80
			12/12/45	21	1:80	—	..	1:1,280	1:160	1:320	1:80
			12/26/45	35	1:80	1:80	..	1:640	1:160	1:320	1:80
			1/16/46	56	1:40	—	..	1:320	1:80	1:160	1:40
			2/ 6/46	77	—	—	..	1:320	1:40	1:160	—
			2/27/46	98	—	—	..	1:320	1:40	1:160	—
			3/26/46	125	—	—	..	1:160	1:20	1:80	—
4	4/25/44	1.0									
	5/ 2/44	1.0									
	5/ 9/44	1.0									
			4/ 9/45	8	1:40	—	..	.....	.....	.....	.....
			4/12/45	11	1:40	1:40	..	.....	.....	.....	.....
			4/18/45	17	1:640	1:640	..	.....	.....	.....	.....
			4/24/45	23	....	....	..	1:1,024	1:512	.....	.....
			4/25/45	24	1:640	....	..	.....	.....	.....	.....
			3/ 4/46	337	—	—	—	1:20	1:10	—	—
5	8/ ?/42 to 12/28/44	8.5									
	3/22/45	1.0									
			4/21/45	20	..	..	..	1:128	1:64	.....	....
			7/ 3/45	92	1:40	—	...	1:40	1:20	1:160	—
			3/ 3/46	336	1:40	..	..	1:20	1:10	—	—

* Cox type ether-extracted epidemic typhus vaccine.
† Five cubic centimeters of this vaccine was of an experimental bivalent type containing epidemic and murine rickettsias.

and 1:4 with murine antigen. By the end of the first week of disease the Proteus OX 19 titer rose to 1:20, and in the second week it rose to 1:80. It reverted to negative in the fourth week. The complement fixation titer rose rapidly to attain a titer of 1:1,024 in the second week. Almost two years later the complement fixation (with epidemic antigen) was still positive with a titer of 1:10.

Case 2.—A man aged 35, an officer and a member of the United States of America Typhus Commission, was engaged in typhus research work in Cairo, Egypt, with another officer (case 1) for over a month prior to the onset of illness. Although he was exposed to the disease daily, he recalled that he was dangerously exposed on June 11, 1944 when he assisted with the handling and grinding of infected louse feces in large amounts. In the period from Dec. 23, 1941 to Oct. 10, 1943 he received a total of 12.0 cc. of typhus vaccine in 1.0 cc. increments. On Nov. 22, 1943 he received 1.0 cc. epidemic typhus vaccine and on April 10, 1944 an additional and final dose of 1.0 cc. of the vaccine. Although the Weil-Felix reaction was negative with both Proteus OX 19 and Proteus OX 2 antigen, the complement fixation titer with epidemic antigen was 1:8 three days before and eleven days after the patient received the last dose of vaccine.

On the morning of June 23, 1944 the patient awakened with a mild but troublesome frontal headache which persisted throughout most of the day. The next day the headache recurred together with malaise and easy fatigability. His temperature was 101 F. These symptoms persisted with such an increase in both severity and extent of the headache that he was admitted to the hospital late in the afternoon of the next day, June 25. The following day his temperature was 100.4 F., his pulse rate was 80, his respiratory rate was 20 and his blood pressure was 106 systolic and 60 diastolic. Although he did not appear acutely ill, he complained of headache, sensations of chilliness and nausea. Physical examination revealed only a well defined injection of the scleral conjunctivas. Later in the afternoon his temperature rose to 102 F. and a diffuse macular eruption appeared over the anterior part of the chest, arms, shoulders and flanks with an erythematous blush that disappeared on pressure. He continued that afternoon and night to experience slight chills. By the next morning the rash had definitely faded but his headache, which was now generalized, became exceptionally severe. Chills continued, and he appeared decidedly ill. There were intermittent, drenching sweats, and he complained of severe backache and general malaise. The temperature rose to 103.2 F. that night, but the pulse rate was only 90. The respiratory rate was normal. Although the temperature fell to 99.2 F. by the following morning (June 28) and remained below 100.6 F. throughout the course of the day, severe headache, malaise, sweating and occasional chills persisted. He vomited several times, and on one occasion there was a transient amnesia. During the next two days these symptoms still persisted but the temperature remained relatively low and the rash became increasingly less evident, disappearing completely by July 1. On June 29 the physician reported that the patient appeared to be disoriented for a brief period, but this was not confirmed and was later denied by the patient. From June 30 on, there was rapid and progressive improvement (chart 1) with fall in temperature by rapid lysis, subsidence of headache, malaise, nausea and vomiting and rapid increase in serologic titers for typhus fever. On June 30 there was a left earache, but this disappeared within forty-eight hours without specific therapy. The temperature was normal by July 3. On July 5 the patient was permitted to be out of bed, and he was discharged on the following day as an ambulatory patient.



DAY OF DISEASE		1	2	3	4	5	6	7	8	9	10	11	12	13	14
BLOOD PRESSURE					106/60	106/60	106/60		106/64	106/70	104/66		110/60	114/60	
RESPIRATORY RATE					20	20 20	20 20	22 20	20 22	22 18	20 18	20 20	18 18	20 20	
HEADACHE		+	±	++	+	+++	+++	+++	+	−	−	−	−	−	−
CHILL					+	+	+	−	−	−	−	−	−	−	−
RASH				−	++	+	+	±	±	−	−				
WBC X 1000				6.3								5.0			
PROTEUS OX19			−	−	−	−	−	−	1:20		1:80		1:160		1:640
COMPL FIXATION	EPIDEMIC		1:8	1:8	1:8	1:32	1:32	1:64	1:128		1:128		1:256		1:256
	MURINE		−	−	−	−	−	−	1:8		1:32		1:32		1:64

Chart 2.—Clinical course and early serologic data in case 2, an example of a moderately severe case of epidemic typhus in a vaccinated person.

During the course of the patient's stay in the hospital there was no pronounced hypotension. On June 26, the day of admission, the red blood cell count was 4,600,000, the hemoglobin was 95 per cent and the leukocyte count was said to be 6,300 with 45 per cent stab cells, 33 per cent polymorphonuclear neutrophils, 20 per cent lymphocytes and 2 per cent monocytes. On July 3 examination of the blood was as follows: red cells 4,650,000, hemoglobin 95 per cent, leukocytes 5,000 with 15 per cent stab cells, 53 per cent polymorphonuclear neutrophils, 18 per cent lymphocytes and 14 per cent monocytes. Urinalysis on June 26 was negative. The color was clear amber, and the specific gravity was 1.010. Tests for albumin and sugar were negative.

Serologic tests were performed daily during the early acute phase of the disease. The Weil-Felix reaction with Proteus OX 19 antigen remained negative until the eighth day, when it became positive in a titer of 1:20. It then rose rapidly, reaching a top figure of 1:1,280 on the nineteenth day. It was still positive at 1:80 on the one hundred and twenty-fourth day, but when next checked almost two years after the onset of the disease, it was found to be negative. Complement-fixing antibodies began to rise by the end of the first week of disease, reaching a peak with epidemic antigen of 1:512 by the nineteenth day. The titer began to fall after the thirty-first day, and when last checked almost two years later the titer was still positive at 1:20. Specific rickettsial agglutinations were negative at that time.

Case 3.—A man aged 36, an officer and a member of the United States of America Typhus Commission, was engaged in typhus control work in Hokkaido, Japan. On Nov. 10, 1945 he was heavily exposed in the room of a Japanese hospital to dust containing suspended louse feces from the clothing of a patient with an active typhus infection. From Feb. 17, 1944 to July 28, 1944 he had received a total of 4.0 cc. of typhus vaccine in 1.0 cc. doses. On May 9, 1945 and Oct. 1, 1945 he received additional 1.0 cc. doses of the vaccine. On June 6 and Aug. 4, 1945, serologic examination was as follows: the Weil-Felix reaction was negative; complement fixation was 1:10 with epidemic antigen and negative with murine antigen, and rickettsial agglutination was 1:40 with epidemic antigen and negative with murine antigen.

On Nov. 22, 1946 the patient experienced sensations of chilliness and generalized malaise. The next day headache, apathy, anorexia and irritability appeared. These persisted during the next two days with chilliness, and although the patient felt feverish he did not take his temperature. On the fifth day the temperature was 101.8 F., the pulse rate was 88 and the respiratory rate was 20. Headache became severer and was predominantly bitemporal. A persistent dry hacking cough set in, and the patient vomited once. The next day, the sixth day of disease, he refused hospital admission but finally took to bed in his quarters. The headache became excruciating in severity, the temperature rose to 102.2 F. and nausea and cough persisted. Although the temperature rose to 103.8 F. the night of the seventh day and he became drowsy, there was suddenly a feeling of relative well-being on the following day, with sudden resolution of fever by crisis and with profuse sweats. He was afebrile by the ninth day, out of bed on the tenth day and back to work on the thirteenth day, although he tired easily on exertion. The blood pressure remained normal throughout, and there was no rash. The lungs were clear.

The leukocyte count on the seventh day was 5,000. On the thirteenth day, a complete examination of the blood at an outpatient clinic showed 4,620,000 red cells, 90 per cent hemoglobin and 6,600 leukocytes, with a differential count of 64 per cent polymorphonuclear leukocytes and 36 per cent lymphocytes. On the twelfth day urinalysis was negative except for a faint trace of albumin, with a few leukocytes in the microscopic examination. These findings had disappeared by the following day. On the twenty-first day the electrocardiographic tracing was normal in all four leads. The heart rate was 84, the PR interval was 0.16 second, there was sinus rhythm, the QRS complexes were 0.06 second, the T waves were upright in all leads and there were no ST changes.

The serologic changes are given in detail in table 3. Briefly, the Weil-Felix reaction became positive on the seventh day with a titer of 1:40 and reached as high as 1:80 by the fourteenth day. The complement fixation began to rise with epidemic antigen by the end of the first week and was still strongly positive by the fourth month. Rickettsial agglutination did not rise until the second week but reached its peak at that time with a titer of 1:640 with epidemic antigen. It was still positive by the fourth month.

Case 4.—A man aged 32, an officer, was engaged in typhus control work in Fischbach, Germany. On March 23, 1945, he and another officer (case 5) were heavily exposed to dust containing suspended louse feces in the room of a barracks (recently taken from the Germans) in which louse-infested Russian typhus patients were hospitalized. A Russian male nurse had just vigorously shaken out a shirt belonging to one of the patients. The officer (case 4) had received only three 1.0 cc. doses of typhus vaccine, given one week apart in April and May, 1944. The first dose was received April 25, 1944 and the last dose May 9, 1944, a full year before exposure to infection.

The onset of illness was April 2, 1945 with headache, chilliness, decided fatigue and mental depression. These symptoms persisted, and the following day the patient had a shaking chill. The next day, the third day of disease, he was admitted to the hospital for an elective surgical operation of minor nature. Although his temperature at this time was 100 F., physical examination revealed no abnormalities. He was closely observed, and on the fourth and fifth days, although his temperature had risen to 103 F. and he had several shaking chills and an increase in headache, backache and generalized malaise, no observations of a diagnostic nature other than cervical adenopathy and pain in the right upper quadrant were evident. In the next six days his temperature ranged from 101 to 104.5 F. and he complained bitterly of an excruciating headache. He was nauseated and vomited. Malaria, meningitis, hepatitis and infectious mononucleosis were considered in the differential diagnosis along with typhus fever, although definite evidence could not be obtained for any of these diseases. Finally, the diagnosis was clarified on the eighth day by the appearance of a crop of pink macules over the abdomen, chest and back. This rash spread to the arms and legs by the following day but began quickly to fade shortly thereafter (on the tenth day) with an abrupt fall in temperature; it disappeared on the twelfth day. There were no hemorrhagic residues. The fever, which fell by crisis, reached normal by the afternoon of the eleventh day. On the fourteenth day the patient was permitted to get out of bed, and convalescence was uneventful except for weakness and depression.

Many diagnostic laboratory procedures, such as blood culture, lumbar puncture, blood smears and various agglutination tests, were performed on this patient in the early acute phase of the disease but were all essentially negative. Roentgenologic examination of the chest on the ninth day revealed clear lung fields. The leukocyte count on the eleventh day was 7,000 with 70 per cent polymorphonuclear neutrophils, 20 per cent small lymphocytes, 8 per cent large lymphocytes and 2 per cent basophils; on the fifteenth day the leukocyte count was 8,000 with an essentially normal differential count. The Proteus OX 19 agglutination titer rose from 1:40 on the eighth day to 1:640 on the seventeenth day. The complement fixation titer for epidemic antigen on the twenty-third day (performed at the First Medical General Laboratory in Paris) was 1:1,024. Almost a year later this reaction was still positive in a dilution of 1:20, while the Weil-Felix reaction was negative.

Case 5.—A man aged 45 was the chief medical officer of a Civil Affairs unit in Germany and frequently came into contact with typhus patients during the course of his work. On March 23, 1945 he was heavily exposed to dust containing suspended louse feces along with and under the same conditions as the officer in case 4. He had received a total of 8.5 cc. of typhus vaccine from August 1942 to Dec. 28, 1944. All these doses were 1.0 cc. except for a single dose of 0.5 cc. On March 22, 1945 he received his final stimulating dose of 1.0 cc. of the vaccine.

The illness of the patient began on April 2, 1945 with fever and headache. These symptoms became progressively severer together with anorexia during the ensuing five days. Finally, when the headache became excruciating in severity and a nonproductive cough set in, he reported on the eighth day to a medical dispensary. His temperature was 103 F. He was not hospitalized but was put to bed in his quarters. The temperature progressively fell during the next several days, becoming normal by the thirteenth day, and the headache abated. He returned to work on the fourteenth day. There were no chills. Cutaneous eruption was absent.

Appropriate laboratory procedures were not performed during the acute stage of the disease to confirm the diagnosis. A specimen of blood collected on the twentieth day and examined by the First Medical General Laboratory revealed a complement fixation with epidemic antigen in a dilution of 1:128 and with murine antigen in a dilution of 1:64. Unfortunately, no record exists of further specimens being examined for serologic data until July 2, 1945. This sample, examined at the Army Medical School in Washington, D. C., indicated that the complement fixation titer had dropped but was still positive in a dilution of 1:40. Complement-fixing antibodies were still present in a titer of 1:20 almost a year after the onset of illness.

CLINICAL FEATURES

The clinical features of the 5 cases reported herein are summarized in table 2. All the patients were male officers; 3 were in their thirties and 2 were in the fifth decade of life. Except in case 4 all patients had received adequate amounts of vaccine and stimulating doses had been administered within eleven to seventy-three days prior to the onset of disease. The officer in case 4 had only an initial series of three 1.0 cc. doses of vaccine, the last dose having been administered almost a full year before the onset of typhus. In this connection it is interesting to note that he not only suffered the severest attack of typhus of any of the group, with asthenia lasting well into late convalescence, but also presented a widespread eruption over the entire trunk, legs and arms. The incubation period ranged from ten to thirteen days in the 3 cases in which it could be accurately determined, was questionable at twelve days in 1 case and was less than seventeen days in another case. Only 2 of the 5 officers were ill enough to be admitted to the hospital; the others remained in bed in their quarters. Of particular interest is the short period for which they were confined to bed. In 3 cases this was five days or less; in the remaining 2 instances it was ten and eleven days, respectively. The duration of fever (less than 99 F.) from the onset of disease was likewise reduced in comparison with that in the average unvaccinated patient, the values being six, ten, nine, eleven and twelve days for cases 1, 2, 3, 4 and 5, respectively. Rash was absent in 2 cases and even when present (except in case 4) was not striking. Symptoms referable to the central nervous system, except for headache, were conspicuous by their absence, although in case 2 the patient was said to have shown some indication of disorientation for a short period. This, however, was never substantiated. Headache was severe in every instance and was by far the most striking symptom of the disease. Leukocyte counts were performed in 3 cases during the course of the disease, early and late. In no instance was there a leukocytosis, thus giving the picture of an uncomplicated rickettsial disease. In classical typhus, early counts not infrequently show a leukopenia while later in the disease with the appearance of bacterial complications the count rises rapidly with an increase in the young neutrophilic fraction of the differential count. There was no evidence in any of the cases of undue prostration or of cardiovascular or renal involvement.

The picture reported here is in decided contrast to that in the unvaccinated patient with classic typhus. The temperature in classic typhus usually remains elevated between 104 and 106 F. until the end of the second week; the patient becomes delirious, comatose and finally stuporous, and signs of cardiovascular and renal involvement may appear. The rash is extensive and hemorrhagic, and convalescence is prolonged.

Of particular interest is the method of infection. In every instance there was considerable evidence to indicate that infection was not sustained by the "bite" of a louse but rather by the inhalation or conjunctival absorption of suspended infected louse feces. It has been well known for many years that physicians and nurses attending patients with epidemic typhus fever contract the disease in spite of active and vigorous measures to prevent infestation with lice.

SEVERITY AND MORTALITY OF POSTVACCINATION TYPHUS

The clinical features of the 5 cases of postvaccination epidemic typhus described here are in general accord with those already described for laboratory [17] and field [18] infections. These studies show that the clinical course of epidemic typhus is greatly modified when infection occurs subsequent to immunization with vaccine. The temperature is much lower and the fever is of shorter duration than in nonvaccinated patients, the period of hospitalization (if necessary) is appreciably reduced, the extent and duration of rash is diminished, circulatory and nervous symptoms are lessened and the incidence of complications is brought down to an exceedingly low figure. The most striking result of immunization, however, is the fact that there has not been a single death reported in the series of cases of adequately vaccinated patients studied in these investigations.

In many instances the diagnosis of typhus is extraordinarily difficult in vaccinated persons because of the modification of the clinical picture and serologic procedures must be employed for confirmation. The only important symptom which regularly remains is the severe headache.

It is difficult at this time to accurately state the time limits within which one may expect satisfactory protection from typhus after vaccination. It would appear, however, from such data as are available that protection is adequate up to a year following vaccination and that there is little indication that vaccine exerts a favorable action unless it is given at least one and a half or two weeks prior to exposure. Ecke and his colleagues [16d] observed that there was no apparent diminution in benefit up to three hundred and twenty-five days subsequent to the reception of a dose of typhus vaccine, and that while the course of illness was somewhat shorter and milder in a group of patients who were vaccinated within one and a half to two weeks prior to the onset of the disease, fatality might occur. A 35 year old man who was vaccinated three days before the onset of disease died with epidemic typhus. In the present report, 1 patient (case 4) had not received vaccine for eleven months prior to the onset of disease. His disease ran a moderately severe course, and he had an extensive rash. In the light of this experience, the time limit for maximum effectiveness of vaccine appears not to exceed six months after the initial series or stimulating dose; and suitable protection cannot be expected unless the vaccine has been administered at least four weeks prior to the onset of disease or two weeks before exposure. In this connection, Topping, Henderson and Bengtson [19] have brought out the importance of the stimulating dose of vaccine in producing a high titer antibody that will persist for a considerable period of time.

SEROLOGIC DIAGNOSIS

The discovery of the Weil-Felix agglutination test, employing suspensions of certain strains of Proteus provided a serologic reaction which was extensively used in the diagnosis of typhus fever. This reaction, although nonspecific, was of great value. Subsequently it became known that this reaction not only failed to differentiate between certain members of the group of rickettsial diseases but also did not differentiate between epidemic and murine typhus. Such distinction is of importance in survey and control work with typhus fever. This differentiation also proved to be desirable in the case of troops who, during the past war, became infected with typhus in many parts of the world.

The successful effort of Cox [8] in cultivating rickettsias in the yolk sac of the fertile hen's egg and Craigie's [10] demonstration of the ether method of extracting such cultures led to the preparation of a rickettsial antigen with which serologic studies (agglutination and complement fixation) could be performed.

Bengtson [20] described a complement fixation test for murine typhus. This complement fixation reaction, as subsequently developed and elaborated, not only clearly differentiated typhus from other rickettsial diseases but also served to separate epidemic from murine typhus provided that certain precautions, as outlined by Plotz, Wertman and Bennett [21] were closely followed. These investigators showed that when the rickettsial suspensions were rendered free of soluble antigen, specific complement-fixing antigens were obtained with which these closely related diseases could be differentiated.

The serologic response in acquired epidemic typhus fever is now well defined and established.[22] The presence of agglutinins in rising titer for the Proteus OX 19 bacillus may be demonstrated between the fourth to thirteenth day, usually about the beginning of the second week. The titer rises during the second week to reach its maximum in early convalescence and usually disappears about three months after onset. Complement-fixing and rickettsial agglutinating antibodies can be demonstrated during the second week of disease.

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[17] Gold and Fitzpatrick.[16a] Topping.[16c]

[18] Ding.[16b] Ecke, Gilliam, Snyder, Yeomans, Zarafonetis and Murray.[16d]

[19] Topping, N. H.; Henderson, R. G., and Bengtson, I. A.: Epidemic Typhus Fever: Studies of Epidemic Typhus Vaccine, in Topping, N. H., and others: Studies of *Typhus Fever, National Institute of Health Bulletin* 183, Federal Security Agency, United States Public Health Service, 1945, p. 65.

[20] Bengtson, I.: Complement Fixation in Endemic Typhus Fever, Pub. Health Rep. **56:** 649 (March 28) 1941.

[21] Plotz, H.; Wertman, K., and Bennett, B. L.: The Serological Pattern in Epidemic Typhus Fever: I. The Development of Complement-Fixing Antibodies, Division of Virus and Rickettsial Diseases, Army Medical School, Army Medical Center, Washington, D. C., unpublished data.

[22] Plotz, H.: The Significance of the Serological Reactions *in the Diagnosis of* Rickettsial Diseases, in Transactions of the First Inter-American Conference on Typhus Fever, *Mexico City, 1945*, to be published.

Rickettsial agglutination reaches a nonsignificant titer in late convalescence, while the complement-fixing antibody seems to persist for years after an attack. Indeed, Plotz[22] has found complement-fixing antibodies in epidemic and murine typhus in 2 instances as long as thirty-two and twelve years subsequent to the active infection.

Recently the development of serologic response in man after the administration of epidemic typhus vaccine has been studied by Topping, Henderson and Bengtson[19] and Zarafonetis.[23] These studies briefly show that while such vaccination calls forth epidemic complement-fixing antibodies in low titer there is usually little or no response with the Weil-Felix test. While there is an increase in complement fixation titer as a result of booster vaccination, the trend is still for a return to the prebooster level within several months after the booster injection.

When a person who has received typhus vaccine becomes infected with epidemic typhus, the Weil-Felix reaction, rickettsial agglutination and complement-fixing antibodies appear somewhat earlier than in nonvaccinated persons[24] but continue to rise and eventually yield a serologic picture similar to that in the nonvaccinated patient. In general the titer obtained with complement-fixing epidemic antigen exceeds that with murine antigen, but occasionally considerable cross fixation may be observed.[24a] Until further data are obtained it is therefore unwise to depend solely on the complement fixation reaction for differentiation between epidemic and murine typhus in those persons who have been previously vaccinated.

In the patient who contracts murine typhus subsequent to immunization with epidemic typhus vaccine, Plotz and Wertman[25] and Zarafonetis and his co-workers[24a] have found that complement-fixing epidemic antibodies may be evoked in substantial titer, thus rendering differentiation impossible by the complement fixation reaction alone. Such differentiation, according to Plotz and Wertman,[25] can only be achieved by using the specific rickettsial agglutination test.

The serologic reactions[26] in the 5 cases reported here are summarized in table 3. Agglutinins for Proteus OX 19, while generally not present in the preinfection stage, appeared in low titer by the seventh to ninth day. In 2 of the 4 instances in which this test was carried out the titer never exceeded 1:80, while in the remaining patients (cases 2 and 5) the titer reached a peak of 1:1,280 and 1:640 during the third week. The titers dropped rapidly to attain a negative value except in case 5, in which a value of 1:40 was found almost a year following infection.

Complement-fixing antibodies were found in low dilution prior to infection in all 3 instances in which the test was performed. These titers (1:8, 1:8 and 1:10) were due to immunization with vaccine. In case 2, in which tests were carried out daily during the first week of disease, the complement fixation titer rose from 1:8 to 1:32 on the fifth day, 1:64 on the seventh day, 1:128 on the eighth day, 1:256 on the twelfth day and 1:512 on the nineteenth day. This illustrates in excellent fashion the early and rapid rise of complement-fixing antibodies in the previously vaccinated subject. Although the serologic course was not followed as early and as consistently in the remainder of the cases, the results in general show that complement-fixing antibodies were rising rapidly by the end of the first week to reach their peak in the second or third week. Such peak titers ranged between 1:128 to 1:1,280 in the 5 cases studied and fell off slowly in late convalescence. The titer was still positive at 1:10 in case 1 almost two years after infection, at 1:20 in case 2 one and a half years after infection and at 1:20 in cases 4 and 5 a year after infection. In case 3, which has been followed only four months since the onset of disease, the complement fixation titer remains positive in a dilution of 1:320. In all instances the differentiation with epidemic and murine antigens was clearcut.

Although the complement fixation titer obtained in case 5 was never above 1:128, a value which may be observed on occasion with vaccination alone, the diagnosis of epidemic typhus seems valid on the basis of the persistence of such antibodies for a prolonged period and the clinical history of exposure and onset of disease identical with that in case 4.

It was possible to obtain data on specific rickettsial agglutination throughout the course of disease only in case 3. Here the appearance and rise in titer roughly paralleled that of the Weil-Felix reaction, although higher values were obtained and agglutinins persisted for a longer time. In case 2, in which the test was performed almost two years after infection, and in cases 4 and 5, in which the test was carried out one year subsequent to the active attack of disease, the values obtained were negative.

The above results are consistent with those already recorded in the literature and confirm the usefulness of the complement fixation reaction and rickettsial agglutination test in the diagnosis of typhus following vaccination. They also demonstrate that although the Weil-Felix reaction may prove useful in such confirmation the titers usually obtained are low, and conclusions must be based on a series of examinations rather than on one or two tests.

SUMMARY

In the period Jan. 1, 1942 to Dec. 31, 1945 there were reported in the entire United States Army 64 cases of epidemic typhus, 603 cases of murine typhus and 6,685 cases of tsutsugamushi fever, or scrub typhus. There were no deaths during this period from epidemic typhus fever.

While no conclusions can be drawn concerning a reduction in the incidence of epidemic typhus by prophylactic immunization with Cox type ether-extracted typhus vaccine, it appears definite that such vaccination does serve to greatly modify the disease if it occurs in an adequately vaccinated person and does render the chance of death from typhus practically nil.

The clinical records and serologic observations in 5 cases of epidemic typhus fever occurring subsequent to prophylactic immunization are reported. In all 5 cases it was highly probable that infection was sustained by pulmonary inhalation or conjunctival absorption of dust which contained infected louse feces.

Complement-fixing antibodies for epidemic typhus persisted for prolonged periods of time, while the Weil-Felix reaction and the specific rickettsial agglutination became negative in late convalescence.

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23. Zarafonetis, C. J. D.: Serologic Studies in Typhus-Vaccinated Individuals: I. The Effect of a Stimulating Dose of Typhus Vaccine on the Weil Felix and Complement-Fixing Antibodies, J. Immunol. **51:** 365 (Nov.) 1945.

24. (*a*) Zarafonetis, C. J. D.; Ecke, R. S.; Yeomans, A.; Murray, E. S., and Snyder, J. C.: Serologic Studies in Typhus Vaccinated Individuals: III. Weil-Felix and Complement-Fixation Findings in Epidemic Typhus Fever Occurring in the Vaccinated, J. Immunol. **53:** 15 (May) 1946. (*b*) Plotz.[22]

25. Plotz, H., and Wertman, K.: Modification of Serological Response to Infection with Murine Typhus by Previous Immunization with Epidemic Typhus Vaccine, Proc. Soc. Exper. Biol. & Med. **59:** 248 (June) 1945.

26. Serologic tests, unless otherwise noted, were performed in the Division of Virus and Rickettsial Diseases, Army Medical School or in the laboratory of the Cairo Field Headquarters of the United States of America Typhus Commission.

THE VALUE OF ENDOTRACHEAL INTUBATION

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In a previous article[1] I described a method for the removal of accumulated tracheal secretions by suction through an endotracheal tube over a long period of time. I showed that this is a life-saving measure and can often be used when bronchoscopy is impossible and tracheotomy is not feasible. I have now succeeded in accumulating further cases to demonstrate the life-saving nature of intubation, apart from its already familiar use during anesthesia. These are cases which came to my attention during the recent war, but the conditions, the treatment and the lessons learned will apply as well to civilian life. Anesthesia, asphyxia, trauma of the respiratory system and trauma to the central nervous system resulting in unconsciousness, concussion or paralysis all give rise to weakness of the respiratory musculature and depression of ciliary activity. Obtundation of the cough reflex and depression of ciliary activity, which are the normal cleansing mechanisms of the lung, soon result in the accumulation of tracheobronchial secretions. These must be removed. I am concerned in this paper with severely wounded men whose normal pulmonary protective functions are depressed, not with the patient who can effect this cleansing by himself if he is encouraged to change his position and to cough. To date four methods for tracheobronchial drainage in the depressed or weakened person have been described. They are as follows:

1. The single catheter method, in which endotracheal aspiration is accomplished by the use of a no. 16 French soft rubber urethral catheter. It has been fully described elsewhere.[2] During the course of the aspiration should the vocal cords close around the narrow catheter the airway will become blocked. If suction is continued, collapse of the lung could occur. The proponent of this method uses it only when equipment is not available for other methods, and he warns that "unless intermittently applied, the suction will provoke severe coughing and cyanosis, and accordingly, the suction should be used for periods of only several seconds each, the patient being allowed to take a few deep breaths between each period of suction."[2b]
2. Suction with a small catheter through a wide bore endotracheal tube. This is the method which is now termed tracheobronchial toilet in the official nomenclature of the American Society of Anesthesiologists. It was described by Franz Kühn of Cassel, Germany, in 1912.[3] Kühn advocated the use of the wide bore tube in the trachea, because it acted as a speculum preventing glottic spasm and the resultant damage of lung collapse as mentioned heretofore. It thus assures a good airway while suction is being applied by means of the small catheter. Various technics embodying the essential principle of Kühn's method have been described in the intervening years.[4]
3. Suction through a bronchoscope.
4. Suction through tracheotomy.

Having these four potent weapons to combat the accumulation of pulmonary secretions, the physician employs whichever is best suited to the case in hand.

REPORT OF CASES

Case 1.—L. Q., aged 25, received a penetrating wound of the right side of the chest with a sucking pneumothorax on July 19, 1944 near Périers, France. He was given ½ grain (0.03 Gm.) morphine on the battlefield and 2 units of plasma at the collecting station. Anesthesia was commenced at 45 minutes past 3 o'clock and intubation was performed. There was blood in the trachea. The thoracic wounds were debrided and closed. In the evening immense emphysema of the face, neck and thorax with severe respiratory distress developed in the patient. Blind intubation was performed through the right nostril with considerable relief of the respiratory distress. Cutaneous incisions were also made to relieve the pressure. The next day the emphysema continued, and suction was performed at intervals to remove tracheobronchial secretions. On the second day at 45 minutes past 2 o'clock the tube was removed, as the emphysema had subsided enough that obstruction no longer existed. The patient could cough efficiently and coughed up some frothy blood-tinged mucus during the rest of the day. He also had a whispered voice and a slightly sore throat, but the airway was clear. During the next few days the whispered voice persisted, and he continued to cough up bloody mucus. On the sixth day his voice returned, but it was hoarse. I examined his larynx and could see no edema, hemorrhage or hematoma, but there was hyperemia. On the tenth day his speech was normal. Most of the intense emphysema had by now subsided. To summarize, the tube was left in place for forty-one hours. There was dysfunction and hyperemia of the organ of speech for eight days. Thereafter his speech was normal.

Case 2.—L. L., aged 21, on June 24, 1944 during the drive to Cherbourg, France, sustained a puncture wound of the left side of the chest posteriorly with indications of massive hemorrhage inside the thorax. Sixteen hundred cubic centimeters of blood had been withdrawn from his chest by paracentesis, but because of continued respiratory distress and cyanosis the surgeon contemplated a thoracotomy to ligate a bleeding intrathoracic vessel. While the surgeons were preparing to operate I passed a no. 10 Magill tube through the right nostril blindly into the trachea of the conscious patient. After the removal of large amounts of bloody mucous secretions, the patient's condition improved until he was able to aspirate his own trachea. It was apparent that his respiratory difficulty was solely due to accumulated tracheobronchial secretions and not due to compression by a mass of blood, i. e., there was no bleeding intrathoracic vessel. Surgical intervention was deferred, and recovery was uneventful.

Case 3.—M. D., aged 25, received a gunshot wound of the left cheek near Mortain, France, on Aug. 11, 1944. The bullet had perforated the left cheek at the level of the second upper molar and had lacerated the tongue, but it could not be determined exactly where the bullet lodged. The patient was conscious and could speak. He was given a solution of ⅛ grain (0.008 Gm.) morphine and 1/100 grain (0.0006 Gm.) atropine subcutaneously. The nose was cocainized. Right blind nasal intubation was performed with ease, and he was anesthetized with pentothal sodium, nitrous oxide, oxygen and ether. The throat was packed. The wounds were debrided, fragments of bone were removed and, after much probing and pulling at what was thought to be the bullet, the surgical operation was ended without removing the bullet. After the operation the patient did not respond as was anticipated, despite the fact that anesthesia had been light. The mandible was relaxed, and there was no response to nociceptive stimuli. The endotracheal tube was left in place. When I saw him two hours after the operation the pharynx was full of blood, and blood was coming out of the tracheal tube with each respiration. The patient's breathing was obstructed and he was hypoxic. His blood pressure was 80 systolic and 20 diastolic, his pulse rate was 140, and his condition was adjudged critical. Suction through

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[1] Foregger, R.: Use of Endotracheal Tube in Therapy of Post-Traumatic Pulmonary Secretions, Anesthesiol. **7:** 285-290 (May) 1946.

[2] (*a*) Haight, C.: Intratracheal Suction in the Management of Postoperative Pulmonary Complications, Ann. Surg. **107:** 218-228 (Feb.) 1938. (*b*) Haight, C., and Ransom, H. K.: Observations on the Prevention and Treatment of Postoperative Atelectasis and Bronchopneumonia, ibid. **114:** 243-262 (Aug.) 1941.

[3] Kühn, F.: Meltzers Verfahren und die perorale Intubation, Zentralbl. f. Chir. **39:** 73-75 (Jan. 20) 1912.

[4] (*a*) Hathaway, H. R., and Leigh, M. D.: Airway Below the Larynx, Tr. Am. Soc. Anesthetists **5:** 56-63, 1939. (*b*) Waters, R. M.: Tracheobronchial Toilet, Brit. J. Anaesth. **18:** 1-10 (March) 1942.

the endotracheal tube resulted in much improvement within fifteen minutes. Throughout the night suction and oxygen were employed.

The next day examination of the spinal fluid and the eye grounds revealed the presence of a basilar fracture of the skull. He remained unconscious, but the chest remained clear to auscultation.

On the second day the tracheal tube was still in place. He was rapidly regaining consciousness. He was restless and responded to nociceptive impulses, although the sensorium was still somewhat clouded. At 10 p. m. the endotracheal tube was withdrawn, since during the day he had improved and had become conscious and cooperative enough to cough up any tracheal secretions. The tube had been in forty-eight hours. The next day he required suction of the hypopharynx only once, and from this time on he was able to cough well enough to clear the tracheobronchial tree of secretions. When I saw him on the fourth day he was talking, and there was no hoarseness. He was alert but not yet sitting up. I examined his larynx. It was normal in every respect.

Case 4.—J. M., aged 35, was wounded Dec. 12, 1944 near Eschweiler, Germany. The patient had a perforating wound of the upper lip and the tongue and was bleeding into the throat. When I arrived the ward surgeon was sucking out the throat and trying to suture the tongue. The patient's color was gray and he was gasping. Right blind nasal intubation was quickly performed, and a large amount of blood was sucked from the trachea. His respiratory rate and his color improved. Suction was continued, and a pack was placed in the hypopharynx and mouth around the endotracheal tube. This served to compress the lacerated tongue and to prevent more blood from going down into the trachea. This patient was operated on several hours later, at which time the left external carotid artery was ligated and the tongue sutured. Recovery from then on was satisfactory.

Case 5.—R. C., aged 19, had been wounded in the neck by a bullet several weeks before I saw him Jan. 21, 1945. At that time he had a fracture of the first dorsal vertebra with traumatic myelitis below this level. Because of weakness of the thoracic muscles he was unable to cough and expectorate, and partial pulmonary atelectasis had developed. A Magill no. 10 endotracheal tube was passed, using cocaine analgesia, and tracheobronchial suction was performed with a urethral catheter passed through the endotracheal tube. Considerable clinical improvement followed immediately, although follow-up roentgenologic examination showed no change in the pulmonary picture. Tracheobronchial aspiration was performed using the same technic six times in the next seven days, each time with distinct clinical improvement. Nightly refilling of the bronchial tree was the indication for the repetition of the procedure. Transoral tracheal intubation was difficult and was accompanied by considerable discomfort to the patient because of his neck wound. Therefore it was thought best to perform tracheotomy, which would permit more frequent tracheobronchial aspirations, and this was done. Following this the atelectasis cleared in a few days, and the condition of the patient improved enough for him to be sent back to America.

Case 6.—Mr. H., aged 65, a British civilian, was hit by a large United States Army truck and sustained fractures of the left femur and the pelvis and a blow in the left frontotemporal region. I saw him Nov. 18, 1943, two days after injury, at which time coarse bubbling rales could be heard from the doorway. He was sitting up in bed with a great deal of respiratory distress evidenced by rapid, labored breathing, retraction at the sternal notch, dilated neck veins and activity of the accessory respiratory muscles. He was moderately confused and aphasic. I performed blind nasotracheal intubation without cocainization five times in the course of the day, through alternate nostrils. There was little if any improvement, so in the evening I decided to leave the tube in place. Secretions were aspirated through this tube over a period of sixty hours. It was here that I learned an important lesson, because not until forty-eight hours had passed did I realize that these aspirations had been carried out too infrequently and in a desultory manner; it was only after the suction had become more vigorous and frequent in nature that decided improvement occurred. The temperature, which had been 103 F., was now normal. The character of the pulse and the respirations was greatly improved. I withdrew the tube, and throughout the day he coughed up copious amounts of sputum from the lungs. He was aphonic for one day, but the airway was free. The next day he was so much improved that the surgeons inserted a pin through the distal end of the femur. He continued well for two days with a normal temperature and a pulse rate below 100. At this time I myself was confined to bed with an infection of the respiratory tract. There was no one to skillfully aid and encourage him in the pulmonary toilet, and he again began to accumulate tracheal secretions. After a few days he died. Autopsy was not performed; neither was the glottis and trachea examined in death by laryngoscopy.

COMMENT

The value of endotracheal intubation as a dramatic life-saving procedure in the unanesthetized person is again herein clearly shown. Moreover, further evidence is offered that the human larynx will withstand repeated intubation, and that a tube may be left in place for a long time without permanent harmful results. There is nothing new in these observations, for William MacEwen of Glasgow recorded in 1880 that he had saved several patients from death by asphyxiation by using an endotracheal tube to provide the necessary airway. In one case he kept the tube in the trachea thirty-six hours and in another, thirty-five hours.[5] But it seems that in medical science the value of some procedures must be repeatedly affirmed before they become part of the physician's daily armamentarium. Although these are all instances arising in military life, the same situations could and do occur in civilian life. Automobile accidents result in trauma to the central nervous and respiratory systems. Brain tumors, infections, poliomyelitis, asphyxia and drug depression all give rise to weakness of respiratory musculature and depressed cough activity. To combat the evil effects of these accidents and diseases of vital functions, skilled physicians and adequate equipment should be as abundant in civilian life as they were directly behind the frontline of battle. It is not asking too much that every medical student should understand the nature of this problem and should begin his training in the art of endotracheal intubation before graduation. In most of the cases cited here, the method of tracheal aspiration using suction through a soft rubber Magill tube was used. But this, although a simple method, does not mean that other methods cannot and should not be used. The important point, in my opinion, is to recognize the nature of the malady and to institute some form of therapy to remove the offending secretions from the tracheobronchial tree. This may be any one of the four known methods for drainage of the trachea, the choice being dictated by the nature of the case in hand and the capacity of the physician whose lot it is to perform the task. Skill in one form may be predominant, and the physician will naturally elect to use the method with which he is most familiar. Skill and dexterity should have their sanction: the privilege to make decisions and perform technics with a tranquil mind and without interference.

CONCLUSIONS

1. Endotracheal intubation is herein shown to be a life-saving measure.

2. The human larynx withstood an indwelling catheter for forty-one and forty-eight hours, respectively in 2 cases, without permanently harmful results.

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ESOPHAGEAL LEIOMYOMA

Report of a Successful Resection

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Benign tumors of the esophagus are rare and usually are encountered as incidental findings at autopsy. Moersch and Harrington [1] have stated that of 11,000 patients complaining of dysphagia only 15 had benign esophageal tumors as a basis for their complaint. In a review of 7,459 necropsies they observed 44 of these tumors. In 6,001 postmortem examinations at the University of Chicago 11 benign esophageal tumors have been found. Case reports and reviews concerning approximately 200 such tumors have been published.[2] A wide variety of benign neoplasms occur in the esophagus: adenoma,[3] papilloma,[4] polyp,[5] fibroma,[6] myxofibroma,[7] neurofibroma,[8] hemangioma,[9] lipoma,[10] ostechondroma [11] and the most frequent form, myoma.[12]

There have been few reports on the surgical treatment of benign esophageal tumors. This is due not only to the paucity of these lesions but also to the relatively recent advance of surgery to a stage where intervention is advisable. Three cases of surgical resection of esophageal myoma have been published, of which only 1 was successful. This was described in Ohsawa's remarkable discussion in 1933.[13] He described a 43 year old woman who had experienced dysphagia for twenty-four years. A diagnosis of idiopathic esophageal dilatation was made. In performing an esophagocardioplasty for relief of the cardiospasm, Ohsawa encountered an unsuspected submucosal myoma about 1 cm. in diameter, which he enucleated.

Another case was reported by Harrington and Moersch.[14] Their patient was a 39 year old man, who gave a history of asthmatic bronchitis and hay fever of twenty years' duration. No dysphagia or regurgitation had occurred. Roentgen examination revealed an increased density in the left side of the inferior posterior mediastinum. The lower end of the esophagus was deformed and displaced to the left. These observations suggested a diaphragmatic hernia. Endoscopic examination showed that the esophagus was irritated by regurgitated gastric juice and confirmed the deflection previously noted. Through a left transpleural route, the esophagus was visualized and its lower 5 inches (12.7 cm.) found to be surrounded by a lobulated tumor mass which extended to the cardia. The lower fourth of the esophagus, the major portion of the tumor and the cardia were resected, and an esophagogastrostomy was performed. The patient expired on the fourth day after the operation from bilateral bronchopneumonia. These authors [14] described another myoma which occurred in a 56 year old woman, but since it was located at the cardioesophageal junction it was impossible to state definitely that it was of esophageal origin.

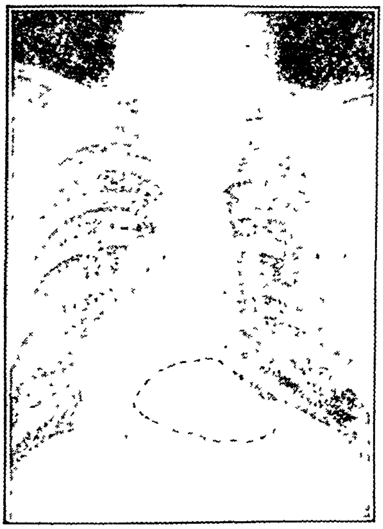

Fig. 1.—Roentgenogram of the chest showing the leiomyoma as a rounded mass of increased density in the right inferior mediastinum.

Also a large cardioesophageal myoma has been successfully resected by Brock.[15]

Harper and Tiscenco [16] mention the case of a 41 year old man who for three years had experienced tightness and distention in his epigastrium shortly after eating. This was of an intermittent nature and was alleviated by vomiting. Occasionally a choking sensation was present. Because of these symptoms he was placed on ulcer management, which failed to bring relief. Esophagoscopy showed a mucosa-covered tumor in the right lateral wall of the esophagus 30 cm. from the incisor teeth. A filling defect in the lower half of the esophagus without obstruction was apparent at roentgen examination. At operation Dick [17] encountered a mass on the posterolateral wall of the esophagus extending upward posterior to the aortic arch. Histologically the resected tumor was a leiomyoma. The patient succumbed on the fourth day, and at postmortem examination bilateral "wet lungs" were found.

Recently a large leiomyoma of the lower thoracic esophagus was successfully resected at the University of Chicago Clinics. A detailed report of this case seems of value.

From the Department of Surgery of the University of Chicago.

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REPORT OF A CASE

A 46 year old Polish laborer presented himself at the University of Chicago Clinics Jan. 22, 1946. He was seen first in the emergency clinic with complaints of epigastric distress and pain in both costovertebral angles. Although this had been continuous for six weeks it had been especially severe for only two days. Closer inquiry revealed that for eighteen months he had noticed occasional pain in the lower part of his chest on the right side. His family physician considered this due to pleurisy and applied adhesive strapping to his chest. This brought relief for several months, after which the pain recurred and persisted with exacerbations and remissions until his admission. Several of the acute episodes of pain were accompanied by nausea, vomiting and frontal headaches. He had experienced some anorexia and had lost 14 pounds (6.4 Kg.). At no time had dysphagia been present. Inquiry by system and history were not contributory. There was decided tenderness in both costovertebral angles, but the remainder of the physical examination revealed no abnormalities. Hemoglobin determination, red and white blood cell counts and routine urinalysis were within normal limits. The blood Wassermann test was negative. Stereoroentgenograms of the thorax revealed a large, rounded mass of increased density in the lower posterior mediastinum, suggestive of a diaphragmatic hernia (fig 1). Fluoroscopy during a barium swallow showed the lower part of the thoracic esophagus to be displaced to the right, the position of the esophagus corresponding to the right margin of the previously noted mass (fig. 2). Approximately the upper fifth of the stomach lay within the mediastinum, but it seemed to be insufficient in volume to have displaced the esophagus so widely. Barium studies of the small intestine and large intestine were done with the thought that possibly these structures also might have passed through the diaphragmatic defect. This was not found to be the case. Intramural or extrinsic tumor was not considered likely. A diagnosis of eccentric diaphragmatic hernia was made and operative intervention advised.

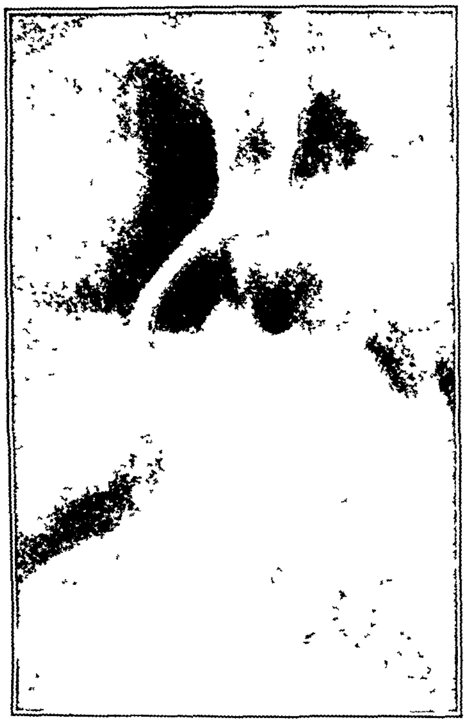

Fig 2—Lower esophagus and stomach during ingestion of a barium meal The lower esophagus is compressed and deviated while the upper fifth of the stomach lies above the diaphragm

On Feb. 23, 1946 under positive pressure, ethylene-oxygen anesthesia the left pleural cavity was entered through the bed of the resected ninth rib. A more adequate exposure was obtained by removal of 2 cm. segments of the posterior parts of the eighth and seventh ribs, with division of the intervening intercostal structures The left lung was retracted superiorly after division of the pulmonary ligament. Palpation of the mediastinum revealed a large, firm mass in the region of the lower esophagus. The mediastinal pleura was incised and the mediastinal cavity explored. The esophageal hiatus was found to be enlarged to a diameter of 5 cm., and the greater part of the fundus of the stomach protruded through this opening. The diaphragm was opened obliquely along its anterolateral aspect and the liver, kidney and spleen identified in their normal locations. It was obvious from this that the palpable mass was a tumor and not a visceral herniation. The stomach was replaced into the abdominal cavity, the diaphragm repaired by use of a continuous suture of doubled 0 chromic catgut, and the hiatus reconstructed to a diameter of 2 cm. The lower esophagus together with the mass was delivered into the operative field. The tumor measured 7 by 7 by 10 cm. and partially surr

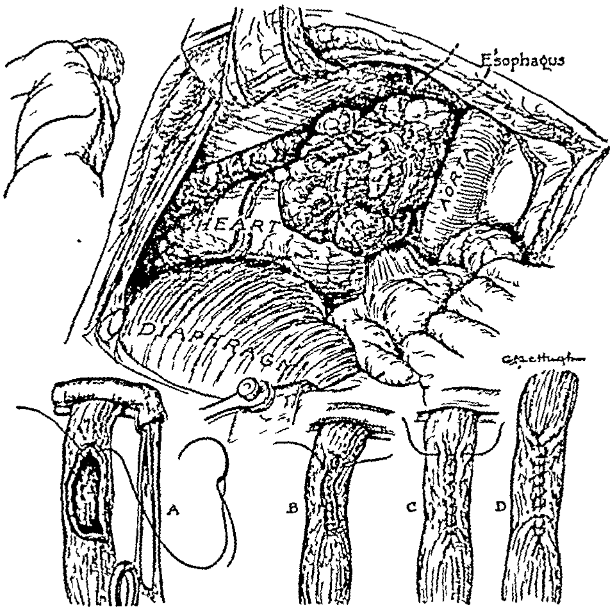

Fig 3.—Operative sketch showing the location and relationships of the tumor and the hernia as well as the incision and method of repair

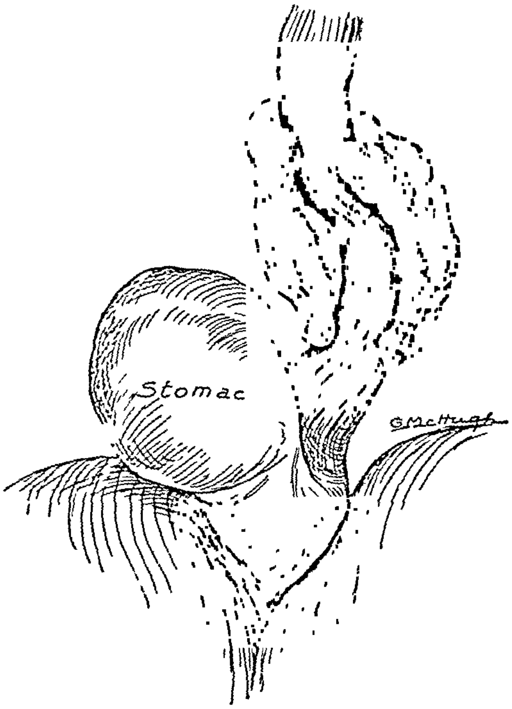

Fig 4—Posterior view of the tumor and herniated stomach.

the lower part of the esophagus. It took its origin from the left posterolateral wall of the esophagus 6 cm. above the diaphragm. The tumor mass was irregularly lobulated, firm, and sharply delineated from the surrounding tissues (figs. 3 and 4). Microscopic examination of a frozen section revealed it to be a leiomyoma. Because of its origin in the wall of the esophagus, it was necessary to excise an ovoid portion of the left posterolateral wall measuring 3 by 7 cm. This defect was closed longitudinally by two rows of interrupted 0 chromic catgut sutures. A de Pezzer catheter was placed in the pleural cavity through a stab wound in the tenth interspace. The wall of the chest was closed in anatomic layers, and the lung was reinflated. While the operation was being performed the patient received 1,200 cc. of whole blood and 1,500 cc. of isotonic solution of sodium chloride intravenously.

Intranasal oxygen was given for two days after the operative intervention. The administration of oral fluids was begun on the fifth day. Other than a slight amount of pain along the external operative site the patient had no complaints, and his postoperative course was uneventful. He was discharged from the hospital on the thirteenth day after the operation.

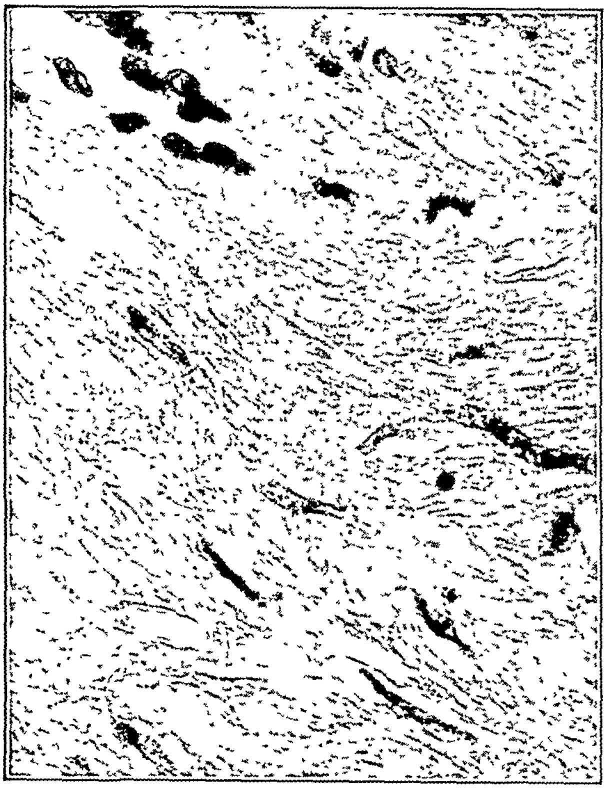

Fig 5—Photomicrograph of the tumor showing strands of smooth muscle cells about the hyalinized vessel.

Roentgenologic examination of his chest and fluoroscopy during a barium swallow one month after the discharge of the patient showed a slight deviation of the esophagus to the right in its lower part but no recurrence of herniation. The patient has had no complaints or evidence of former symptoms since discharge, and when last seen July 1 he was anticipating his early return to hard labor.

The pathologic specimen consisted of an ovoid mass of nodular, firm tissue, which measured approximately 7 by 7 by 10 cm. and weighed 178 Gm. On one side was a deep groove through which the esophagus had coursed, and attached here was a 3 by 7 cm ovoid piece of esophageal wall, from which the tumor appeared to originate. On cut section the tissue was uniformly firm, and many small cystic areas, none larger than 1 mm., were present.

Microscopically the tumor was composed of smooth muscle cells arranged in strands and whorls separated by septums and bundles of connective tissue (fig. 5). The relative amounts of connective tissue and muscle fibers varied greatly and were similar to the variability present in uterine leiofibromyomas. In those areas in which the collagenous tissue predominated the muscle cells were sparse and atrophic. Where the muscle fibers were more abundant, their cells were large and vacuolated. In no place was there any suggestion of cross striation of the muscle fibers. The configuration of the muscular and connective tissue suggested a multilobular appearance, as though there were multiple centers of growth. Phosphotungstic acid and hematoxylin stains identified myofibrils in spindle-shaped cells coursing among connective tissue strands.

The tumor was sharply demarcated from peripheral fatty and areolar tissues, but no distinct capsule was present. The entire tissue contained numerous poorly developed, endothelium-lined cavities, some of which contained red blood cells, while others held a clear fluid or were empty. The majority of these vascular spaces had a dense hyaline wall. In many instances hyaline thrombi were present, and not infrequently the vessel was completely obliterated. Often the spaces were compressed to mere slitlike channels. Focal areas of fatty, hyaline and, infrequently, calcific regression were present, especially near the thrombosed and densely hyalinized vessels.

There was an occasional perivascular focus of lymphocytic infiltration. In some instances these accumulations resembled lymph follicles. In other places this invasion was more diffuse and consisted of a mixture of eosinophils and lymphocytes.

No nerve fibers or ganglion cells were seen in any of the sections

COMMENT

Benign tumors of the esophagus can be divided into two general types, depending on whether they originate from the mucosa and submucosa or from the muscularis. This is a distinction applicable not only to the histologic type but to the clinical symptomatology as well. While the papillomas, adenomas, myxofibromas, lipomas and hemangiomas arise from the submucosal area, the most commonly observed type, the myoma, originates from the muscular coats of the esophagus. The submucosal neoplasms grow into the lumen of the esophagus, usually becoming pedunculated as a consequence of the continued deglutitive process, and produce dysphagia because of their bulk. These are the spectacular patients who present themselves with a tumor hanging from between their teeth. A history of vomiting forth and then swallowing a long pedunculated mass may be given.

Myomas and other intramural tumors produce symptoms by their expansile growth into the adjacent structures. Epigastric or retrosternal distress, intermittent dyspnea and cough are the most commonly reported symptoms. Seldom does dysphagia occur.

Although myomas of the alimentary tract are frequent at necropsy, they appear least often in the esophagus.[18] There they are usually small and have little, if any, clinical significance. Rose [19] in a review of 49 autopsies found the tumor multiple in 11 of 46 instances and commonest in the distal third of the esophagus. In only 4 of his cases did the myomas produce symptoms. Their size varies from a few millimeters to several centimeters in diameter. Stewart [20] discussed 2 cases in which the tumors were associated with diverticula, a situation previously noted by Monro.[20] Myomas of the esophagus seldom involve its entire circumference and only produce symptoms when they attain large size or become malignant. That this last possibility is unlikely is suggested by French and Garland and others [21] who have reviewed sarcomas of the esophagus.

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Myomas can arise from either of the muscular layers of the esophagus although more begin in the longitudinal layer according to Rose. Histologically, leiomyomas, rhabdomyomas[22] or tumors composed of both smooth and striated muscle fibers are found. Pichler[23] has described an esophagus containing multiple leiomyomas which included striated muscle fibers and ganglion cells. These tumors undergo hydropic, fatty and hyaline degenerative changes, and calcification often occurs after such regression. The blood vessels are scanty and small, frequently exhibiting obliterative processes. Lymph vessels are fairly numerous and may contribute largely to the nutrition of these tumors. Lymph follicles and round cell infiltration are often present, but the inflammation is usually slight.

Abrikissoff[24] described a special variety of striated muscle neoplasm in 1926 which he designated as a myoblastoma. This tumor is composed of primitive myoblasts, and several have been found in the esophagus.[25]

It should be emphasized that dysphagia is seldom a symptom of esophageal myoma. Dysphagia when present, unlike that associated with carcinoma, is rarely progressive to the point of complete obstruction but remains intermittent and usually slight. Since myomas are most frequently located in the posterior mediastinal space their growth causes few symptoms, and those which do result are not pathognomonic. The presence of a myoma should be suspected when indefinite esophageal or intrathoracic complaints are coupled with a posterior mediastinal mass. Symptoms are of variable duration ranging from a few months to several years. It is of interest that of the 4 esophageal myomas which have been treated surgically the correct diagnosis was made preoperatively in only 1 instance (Harper and Tiscenco[16]), and here the myoma was not associated with any other esophageal lesion. Ohsawa encountered his tumor unexpectedly during the course of an esophagocardioplasty for the treatment of cardiospasm of long duration. In the case of Harrington and Moersch and in the case reported here, a diaphragmatic hernia was considered the most likely diagnosis and was found in the latter instance. From a study of the anatomic relations of the tumor it seems likely that development of the leiomyoma preceded the formation of the hernia, which probably was secondary to traction exerted by the expanding tumor mass.

By far the most useful diagnostic procedure in this condition are stereoroentgenograms of the chest with appropriate oblique views and fluoroscopy during the ingestion of barium. The last allows an accurate evaluation of the position of the tumor. Extensive radiologic discussions of benign esophageal tumors have been written.[26] Esophagoscopy further aids in their localization and permits differentiation of some benign or malignant lesions, particularly when an adequate biopsy can be secured. Bronchoscopy is indicated if the tumor is so located that the trachea or bronchi are displaced.

CONCLUSION

Benign esophageal tumors have been discussed, with special reference to their surgical treatment. The first successful resection of a large intramural leiomyoma of the esophagus to be recorded in the literature has been performed.

Clinical Notes, Suggestions and New Instruments

PENICILLIN THERAPY OF GONOCOCCIC ENDOCARDITIS OF THE PULMONARY VALVE

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In the past gonococcic endocarditis has been of interest primarily as a diagnostic problem. The mortality rate in acute endocarditis due to the gonococcus approached 100 per cent. With the advent of the sulfonamide drugs and the antibiotics, the treatment of gonococcic endocarditis is not without hope. The National Research Council received reports of penicillin therapy in 5 cases of acute gonococcic endocarditis. Recoveries or clinical arrests were reported in 3 of these cases.[1]

REPORT OF A CASE

A Negro girl aged 18 was admitted to the hospital on March 21, 1945. Her chief complaints were pain in the lower part of the abdomen and constant headache of one week's duration, and vomiting for one day.

The present illness began two weeks earlier, at which time she first noted weakness, listlessness and easy fatigability. She had been seen by a local physician because of delayed menstruation. With the onset of her menstruation one week before admission, she began to suffer pain in the lower part of the abdomen which increased in severity and which persisted. She had had for a week before entry a thick white vaginal discharge. For three days before entry she had chills and fever associated with nausea. On the day of admission she had vomited on several occasions. Her family observed that her eyes were yellow.

Her past history was noncontributory except that she had had measles and mumps as a child. There had been a normal pregnancy with delivery of a healthy child nine months before the present illness. Her family history was entirely negative.

The physical examination on admission revealed a temperature of 101 F., a pulse rate of 90 per minute, a respiratory rate of 18 per minute and a blood pressure of 100 mm. of mercury systolic and 70 mm. of mercury diastolic. She was a well developed and well nourished Negress, who was obviously ill and uncomfortable. The mucous membranes were pale and the scleras were decidedly icteric. The heart was of normal size and shape on percussion; heart sounds were of good quality. The second sound over the aortic area was equal in intensity to the second sound over the pulmonic area. There were no thrills; no murmurs were noted. Examination of the abdomen revealed definite tenderness in the right upper quadrant and pronounced tenderness deep in both lower quadrants. No masses or viscera were palpable. Pelvic examination disclosed tenderness in both fornices with pain on movement of the cervix. The fundus of the uterus was of normal size, shape and position. There was a thick white discharge from the cervix. The remainder of the examination was noncontributory.

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[24] Abrikissoff, A. J.: Ueber Myome ausgehend von der quergestreiften willkürlichen Muskulatur, Virchows Arch. f. path. Anat. **260**: 215-233, 1926; Weitere Untersuchungen über Myoblastenmyome, ibid. **280**: 723-740, 1931.

[25] (*a*) Bade, H.: Ein Beitrag zur Röntgendiagnostik der polypösen Oesophagustumoren, Röntgenpraxis **11**: 174-178, 1939. (*b*) Schatzki, R., and Hawes, L. D.: The Roentgenological Appearance of Extramucosal Tumors of the Esophagus. Am. J. Roentgenol. **48**: 1-15, 1942. (*c*) Harper and Tiscenco.[16]

[26] (*a*) Howe, C. W., and Warren, S.: Myoblastoma, Surgery **16**: 319-347, 1944. (*b*) Klemperer, P.: Myoblastoma of Striated Muscle, Am. J. Cancer **20**: 324-337, 1934.

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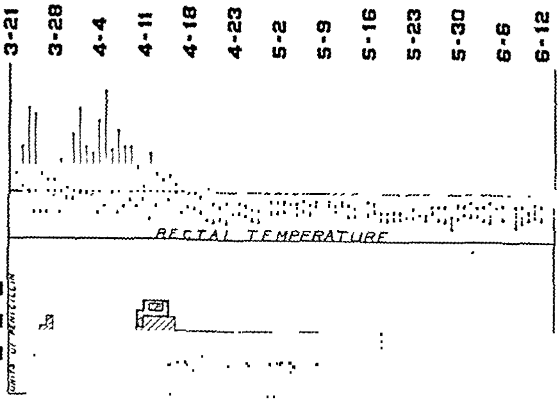
The assistance of Capt. Guy N. Richards, Medical Corps, Army of the United States, and Lieut. S. Richard Bauersfeld, Medical Corps, Army of the United States, former residents in Medicine, is gratefully acknowledged.

[1] Keefer, C. S.: Personal communication to the author.

Laboratory studies on admission revealed the following: the blood had a hemoglobin level of 10.5 Gm. per hundred cubic centimeters; 3,610,000 erythrocytes and 30,300 leukocytes per cubic millimeter, with 96 per cent polymorphonuclear cells. The icterus index was 72 units; the van den Bergh reaction was direct, immediately positive with a total of 12 mg. per hundred cubic centimeters. The Kahn and Kolmer tests were negative. Smear and culture of vaginal secretions were positive for gram-negative intracellular diplococci. Examinations of the blood for *leptospira, sickle cells* and erythrocyte fragility were negative. Three blood cultures in the first ten days after admission remained sterile.

The patient remained quite ill. The rectal temperature ranged between 99 and 107.4 F. It was noted that the patient had occasionally only one and frequently two peaks of temperature daily. She received a high carbohydrate diet, dextrose solution intravenously and penicillin intramuscularly, in the dosage of 30,000 units every three hours for a total of 690,000 units over a period of three days. With penicillin therapy there was a subsidence of genital signs and symptoms. The diagnosis at this time was catarrhal jaundice and acute pelvic inflammatory disease due to the gonococcus.

One week after admission, a roentgenogram of the chest revealed a diffuse infiltration of both lungs with a thickened pleura at the right base; a question was raised of a small amount of fluid being present. Temperature ranged between 98 and 101 F. On March 31, ten days after admission, the hemoglobin had fallen to 5.5 Gm. per hundred cubic centimeters; the erythrocyte count was 2,100,000 and the leukocyte count 21,400, per cubic millimeter, with 86 per cent polymorphonuclear cells. The icterus index was 23 units.



Penicillin therapy of gonococcic endocarditis of the pulmonary valve.

On April 1st, eleven days after admission, the patient had a chill and subsequently a temperature of 105.8 F. She was short of breath and complained of moderately severe pleural pain in the right side of the chest. There was a prominent systolic murmur heard to the left of the sternum in the second interspace, which did not radiate. This was accompanied by an unmistakable systolic thrill in the same area. The signs over the pulmonary field were those of flatness, diminished breath sounds and diminished voice sounds over the right base posteriorly and in the axilla consistent with a pleural effusion. The diagnosis suggested was that of an acute endocarditis of the pulmonary valve due to the gonococcus, with associated pulmonary infarction. Blood cultures taken daily from April 1 to 17 inclusive, were reported sterile. Transfusions of 500 cc. of citrated blood were given daily from April 2 to 5 inclusive. A roentgenogram of the chest on April 3 disclosed a diffuse infiltration of the lower half of the right lung. Examination of a sample of sputum revealed no pneumococci or acid-fast bacilli. Diagnostic thoracocenteses were performed April 4 and 6, at which times 26 cc. and 100 cc., respectively, of bloody fluid were obtained. Cultures of both these fluids revealed gram-negative diplococci.

Penicillin therapy was resumed on April 6. The patient received 30,000 units of the antibiotic intramuscularly every four hours for three days, after which the interval was decreased to every three hours. This dosage of penicillin was continued until May 17, a total of 9,780,000 units. Penicillin was also instilled in the pleural cavity in doses of 50,000 units daily from April 10 to 14 inclusive, a total of 250,000 units. On April 12, 13 and 14 no fluid was obtained from the pleural cavity. A roentgenogram of the chest on April 13 revealed only a minor degree of thickening of the pleura at the right costophrenic angle; the pulmonary fields were clear, and there was no evidence of fluid. After April 21 the patient was free of symptoms and the temperature failed to rise above 99 F. (rectally). The thrill over the base of the heart had disappeared, and the systolic murmur previously heard was softer and much less pronounced. On May 1 the administration of ferrous sulfate, 30 grains (2 Gm.) daily, was started. No other therapy was given.

The accompanying chart shows the maximum and minimum rectal temperatures. The penicillin dosage and the routes of administration are also summarized.

On June 13, 1945 the patient was discharged from the hospital. While she was hospitalized she had received a total of 10,740,000 units of penicillin intramuscularly and 250,000 units intrapleurally. The hemoglobin level at the time of her discharge was 12 Gm. per hundred cubic centimeters; the erythrocyte count was 3,950,000 and the leukocyte count 14,600, per cubic millimeter, with 71 per cent polymorphonuclear cells. A roentgenogram of the chest on discharge revealed that the heart was of normal size, shape and position and that there was a thickening of the pleura in the right costophrenic angle. The murmur heard to the left of the sternum was soft, faint and not transmitted. At no time during the illness was the spleen palpable or were there peripheral embolic phenomena.

Since discharge the patient has been most cooperative and has reported for reexamination regularly. She has remained free of symptoms and has gained considerable weight. She appears to be a healthy Negro girl at the present time. She is free of symptoms and is regularly employed for light housework. The pulse rate has varied between 80 and 86 per minute. The systolic blood pressure varies between 115 and 125 mm. of mercury, and the diastolic pressure, from 75 to 80 mm. of mercury. A soft, blowing nontransmitted murmur is heard to the left of the sternum in the second intercostal space. Recent studies of the blood reveal a hemoglobin level of 13.0 Gm. per hundred cubic centimeters; the erythrocytes number 4,230,000 and the leukocytes 7,400, per cubic millimeter.

COMMENT

At the time of admission of this patient there were no evidences of endocardial involvement. The period of illness prior to entry had been brief. The clinical picture appeared to be that of a severe gonococcic pelvic inflammation with an associated hepatitis. For many years hepatitis has been observed with severe gonococcic infections. It would seem that during the period of observation the pulmonary valve was involved. The evidence for an acute infective endocarditis in this patient was the appearance of a systolic murmur and a systolic thrill to the left of the sternum in the second interspace. The clinical and roentgenologic evidence of multiple pulmonary infarction confirms this thesis. Indeed, the development of an empyema secondary to pulmonary infarction offered the only means of bacteriologic diagnosis. Blood cultures consistently remained sterile.

It seems reasonable to postulate that this patient had an acute vegetative endocarditis due to the gonococcus which involved the pulmonary valve.

Recovery from acute gonococcic endocarditis is indeed a rarity. Futcher and Scott[2] commented on this in reporting the recovery of 1 of 4 patients treated with a sulfonamide compound. My patient has remained apparently well for over eighteen months after her discharge from the hospital.

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[2] Futcher, P. H., and Scott, V. C.: Four Cases of Gonococcal Endocarditis Treated with Sulfonamides with Recovery of One, Bull. Johns Hopkins Hosp. 65: 377, 1939.

SUMMARY

A case of probable acute gonococcic endocarditis of the pulmonary valve was treated with penicillin. Bacteriologic evidence rests with the recovery of a gram-negative diplococcus from empyema fluid. The clinical course of the patient has been uneventful for eighteen months after her discharge from the hospital.

AGGRAVATION OF A GASTRIC ULCER FOLLOWING DORSOLUMBAR SYMPATHECTOMY

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In recent years there has been an increasing interest in the neurogenic factor in the etiology of gastroduodenal ulcer. Abundant clinical and experimental evidence suggests that increased excitability of the parasympathetic nervous system will aggravate the clinical course of the ulcer syndrome. The adverse effects on an ulcer of psychic stimuli, such as worry and anxiety, are well known. Cushing[1] in 1932 demonstrated the frequent occurrence of ulcers and erosions of the gastric mucosa in patients with organic lesions of the midbrain. He also suggested that these lesions were caused by nervous stimuli from the higher brain centers relayed to the stomach through the vagal pathways.

Dragstedt[2] and his associates at the University of Chicago, acting on the concept that the associated gastric hypersecretion and hypermotility are largely neurogenic in origin, have sectioned the vagus nerves in over 90 patients with gastroduodenal ulcer. Although undesirable symptoms were noticed temporarily in a few cases because of gastric retention, in most instances there was prompt and persistent relief of the ulcer distress, prompt healing of the ulcer crater, reduction in the gastric tonus and motility and a definite reduction in the volume and acidity of the gastric secretions. The cases have not been followed for a sufficient period of time to warrant final conclusions, but the results obtained to date have been decidedly impressive.

The effect of the sympathetic nervous system on gastric function and also on the clinical course of peptic ulcer has not been so clearly presented. To a limited extent the sympathetic and parasympathetic systems have a synergistic and antagonistic relationship. In the stomach, however, the effects produced by nervous stimulation are modified considerably by other factors, such as the local automatic tonus of the gastric musculature and the hormonal content of the blood.

It is fairly well proved that sympathetic stimulation will produce decreased tonus and motility of the stomach, spasm of the pylorus and cardia and increased local vasospasm, but the effect of such stimulation on gastric secretions is still uncertain. It is the opinion of Dragstedt[2] that no change would be expected. Kuntz,[3] however, states: "Although interruption of either the vagus or sympathetic nerves supplying the stomach . . . (in most instances) . . . was followed by no marked changes in gastric secretion, the results observed do not warrant the conclusion that gastric secretory activity is not subject to nervous influences. The assumptions, that gastric hyperacidity commonly is associated with parasympathetic hyperirritability, and gastric hypoacidity with sympathetic hyperirritability are supported by ample experimental and clinical data."

Accepting the antagonistic relationship of the two systems, it seems plausible that if vagotomy has a favorable effect in the treatment of ulcer then sympathectomy will have the opposite effect—namely, aggravation of the ulcer. The following case report is of interest because it offers evidence which suggests that this assumption is correct.

REPORT OF A CASE

A man aged 39 was first seen by one of us (A. R. K.) in April 1944. The patient gave a history of severe headaches, vomiting and blurring of vision for two to three months. He also gave a history of mild epigastric distress off and on for one or two years. The epigastric distress was relieved by the ingestion of milk and bicarbonate of soda. His past history was noncontributory except for an appendectomy in 1922, a tonsillectomy in 1919 and the usual childhood diseases.

Examination revealed a well developed, well nourished man aged 39, weighing 135 pounds (61 Kg.). His blood pressure was 250 systolic and 130 distolic. Examination of the eye grounds revealed hemorrhages and exudate 3 plus, edema of the optic disks and vascular sclerosis. Examination of the lungs, heart, thyroid and abdomen revealed that all were essentially normal. There was moderate peripheral vascular sclerosis. Urinalysis revealed specific gravity 1.015, p_H 6, a trace of albumin, 20 to 30 red blood cells and 20 to 30 white blood cells. The blood urea was 72.7 mg. per hundred cubic centimeters, the red blood cell count was 4,460,000, the hemoglobin 13.9 Gm. and the white blood count 10,150, with 87 per cent polymorphonuclear leukocytes. A roentgen examination of the chest and heart revealed essentially normal conditions. Fluoroscopic examination of the stomach revealed a small prepyloric gastric ulcer. Gastric analysis unfortunately was not performed.

The diagnosis of malignant hypertension was made, and the patient was referred to Dr. Paul Flothow,[4] neurosurgeon, for sympathectomy. In April 1944 an extensive Smithwick type of operation was performed, removing the splanchnic nerves from the seventh dorsal to the second lumbar vertebra inclusive. The symptoms of hypertension improved remarkably after operation. The blood pressure dropped to 140 systolic and 90 diastolic, and it has remained there since. The changes in the eye grounds improved, as did the blurring of vision and the headaches. While convalescing from the surgical intervention the patient had a severe gastrointestinal hemorrhage, vomiting fresh blood and passing blood by rectum. The bleeding was controlled by a medical regimen. In spite of the repeated hemorrhages, the patient had practically no pain due to the ulcer, but he did complain of intermittent eructation. One month later, in June, he had a second severe hemorrhage, and again in July, a third. Gastric analysis two months after the sympathectomy revealed a free hydrochloric acid of 64 degrees and a total acid of 75 degrees. Roentgen examination at that time showed a deep ulcer crater on the lesser curvature of the stomach in the prepyloric area and considerable pylorospasm.

Finally, in September, a radical subtotal gastric resection was performed by one of us (H. M. B.), removing four-fifths of the stomach. Gastrointestinal continuity was restored by a posterior, short loop, Hoffmeister anastomosis. Pathologic examination of the stomach revealed a large prepyloric gastric ulcer on the lesser curvature and also an old, healed scarred ulcer in the first portion of the duodenum. There was no evidence of malignant growth.

The convalescence was uneventful. The patient gained weight. He was relieved of his gastric complaints, and for the past year he has been in good health. His blood pressure has ranged between 140 to 160 systolic over 90 to 100 diastolic. Three gastric analyses have been made since the operation, and these all reveal no free hydrochloric acid, even after stimulation with histamine. Roentgen examination shows only a small portion of stomach remaining with a good functioning anastomosis.

It is unfortunate that we do not have in this case adequate studies on the gastric secretions, but when the patient was first seen the symptoms of hypertension so overshadowed the symptoms of ulcer that studies of the gastric secretions were not performed. However, after the sympathectomy there was a decided elevation in free hydrochloric acid.

From the Western Montana Clinic

[1] Cushing, cited by Kuntz.[3]

[2] Dragstedt, L. R.: Section of the Vagus Nerves to the Stomach in the Treatment of Peptic Ulcer, Surg., Gynec. & Obst. **83**: 547-549 (Oct.) 1946.

[3] Kuntz, A.: Autonomic Nervous System, ed. 3, Philadelphia, Lea & Febiger, 1945, pp. 240-241.

[4] Flothow, P.: Personal communication to the authors.

A similar case is reported by Weeks, Ryan and Van Hoy[5] in a recent issue of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

A man aged 47 had a duodenal ulcer plus malignant hypertension. A complete transthoracic vagotomy was performed, and at the same time the left thoracolumbar sympathetic chain was removed from the fifth dorsal to the second lumbar vertebra. Subsequent to this the patient did well. His ulcer symptoms were greatly relieved, although he was troubled somewhat on the fifth and sixth postoperative day with mild gastric dilatation. This was relieved by intragastric suction. The second stage sympathectomy was performed two weeks later, removing the right thoracolumbar sympathetic chain, also from the fifth dorsal to the second lumbar vertebra. After the second operation the patient became extremely ill and finally died on the fifteenth postoperative day. Autopsy revealed a perforated duodenal ulcer with general peritonitis. An interesting feature in this case is the absence of abdominal pain in the presence of a perforated ulcer with peritonitis. The authors state: "The patient's failure to have acute pain ordinarily associated with a perforating ulcer may have been due to the removal of the viscerosensory fibers associated with the sympathetic side of the autonomic nervous system."

COMMENT

These 2 cases offer convincing evidence that extensive resection of the sympathetic nerve supply to the stomach will have a harmful effect on the clinical course of gastroduodenal ulcer. In both cases the sympathetic resection was performed for malignant hypertension, and it is significant that in both cases the resection was extensive, extending from the fifth and seventh dorsal to the second lumbar vertebra. Our patient with a gastric ulcer had three massive hemorrhages shortly after sympathectomy but finally recovered after a subtotal gastric resection. The patient whose case is reported by Weeks, Ryan, and Van Hoy[5] had a duodenal ulcer which perforated, causing death from peritonitis on the fifteenth postoperative day. It is of interest that the sympathectomy relieved the ulcer pain in both these cases, even though the pathologic process continued. This confirms the view that sensations of pain produced by ulcer are transmitted through the sympathetic nerves.

In reviewing these 2 cases we are aware that in 1942 Froehlich, Stephan and Froehlich[6] reported 4 cases of gastric ulcer in which sympathectomy was performed (splanchnic resection with removal of the first two lumbar ganglions). In all of them the distress was relieved and the ulcer crater showed radiographic evidence of healing.

In 1945, however, Sicard, Albot and Tricard[7] reported 8 cases of gastroduodenal ulcer which contradict these observations. Five of these were submitted to bilateral and three to unilateral splanchnicectomy. The first two lumbar ganglions were removed in 2 cases. Although there was some relief of ulcer pain and distress within the first few months, there was no demonstrable change in the appearance of the ulcer crater and there was not a single durable cure. Five were submitted to gastric resection within eighteen months after operation.

In consideration of these observations it is reasonable to assume that the improvement noticed in the 4 cases reported by Froehlich, Stephan, and Froehlich was probably coincidental and not directly related to the sympathetic resection. It is significant that in these cases the resection was incomplete. Hartzell[8] in 1929 demonstrated that vagotomy is ineffective unless all the vagal fibers are divided, and it is probable that the same holds true for the sympathetic nervous system. The relief of pain and distress may be explained by the fact that the nervous fibers conducting the ulcer pain sensations have been sectioned.

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[5] Weeks, C.; Ryan, B. U., and Van Hoy, J. M.: Two Deaths Associated with Supradiaphragmatic Vagotomy, J. A. M. A. **132:** 988-990 (Dec. 21) 1946.

[6] Froehlich, F.; Stephan, F., and Froehlich, C.: Attempts at Treatment of Gastric Ulcer by Splanchnicectomy, Presse méd. **50:** 665-666 (Oct. 24) 1942.

[7] Sicard, H.; Albot, G., and Tricard: Splanchnicectomy for Gastroduodenal Ulcers: Results in Eight Cases, Mém Acad. de chir. **71:** 164-166 (March 14-April 25) 1945.

[8] Hartzell, cited by Kuntz.[3]

THE SUCCESSFUL TREATMENT OF ACUTE RENAL FAILURE BY PERITONEAL IRRIGATION

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Acute renal failure in which irreversible changes have not occurred in the kidneys is not an uncommon condition, and the mortality in such cases is tragically high because of the accumulation of substances which are normally excreted by the kidneys. A considerable reduction in this mortality may be expected by an artificial means of removing these substances, thereby prolonging life while the kidneys recover sufficiently to resume function. Such an artificial method is applicable to numerous conditions which cause acute renal failure: transfusion reaction, toxicity to sulfonamide compounds, poisoning with heavy metals, toxemia of pregnancy and severe trauma.

The idea of artificial removal of the substances ordinarily excreted by the kidneys is not new. Abel, Rowntree and Turner[1] in 1914 demonstrated a method of dialyzing these substances from the circulating blood of living animals by a system of celloidin tubes interposed in the vascular system. Putnam[2] in 1923 showed the effectiveness of the peritoneum as a dialyzing membrane.

These methods have received new attention in the past several years at the hands of two groups of investigators. Kolf and Berk[3] of Amsterdam, Holland, have developed further the artificial kidney, which consists of a cellophane tube immersed in a solution of 0.6 per cent sodium chloride, 0.2 per cent sodium bicarbonate, 0.04 per cent potassium chloride and 2 per cent dextrose. The circulating blood is passed through this apparatus from a cannula in the radial artery and back into the body by a cannula in a vein of the foot or forearm.

Seligman, Frank and Fine[4] of Boston have utilized the peritoneum as a dialyzing area, using a modification of Tyrode's solution. They performed valuable experimental work and reported successful results of peritoneal irrigation in the case of a patient with uremia due to parenchymatous damage of the kidney by sulfathiazole. They have also reported the treatment of 2 patients for transfusion reaction and of 1 patient for uremia due to urinary obstruction.

The management of the case reported herein was based on the work of Seligman and associates,[4] who applied peritoneal irrigation to a patient with uremia due to transfusion reaction. No originality is claimed by us. This case is reported as an addition to the series already in the literature, in the hope that it may make a small contribution to the development and perfection of a lifesaving procedure. It is believed that the present report is the first for successful management of acute renal failure due to transfusion reaction in a solitary kidney.

TECHNIC

The procedure as described by Frank, Seligman and Fine[5] was followed in general, but certain modifications were necessitated by the facilities at hand.

The modified Tyrode's solution was prepared first, in readiness for irrigation as soon as the tubes were inserted. The constituents of the solution, per liter, are as follows: sodium chloride 8.0 Gm., potassium chloride 0.2 Gm., calcium chloride 0.1 Gm., magnesium chloride 0.1 Gm., sodium biphosphate 0.05 Gm., sodium bicarbonate 1.0 Gm., dextrose 1.5 Gm., sulfa-

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[1] Abel, J. J.; Rowntree, W. G., and Turner, B. B.: On the Removal of Diffusible Substances from the Circulating Blood of Living Animals by Dialysis, J. Pharmacol. & Exper. Therap. **5:** 275, 1914.

[2] Putnam, T. J.: The Living Peritoneum as a Dialyzing Membrane, Am. J. Physiol. **63:** 548, 1923.

[3] Kolf, W. J., and Berk, H. T. J.: The Artificial Kidney: A Dialyzer with a Great Area, Acta med. Scandinav. **117:** 121, 1944.

[4] Seligman, A. M.; Frank, H. A., and Fine, J.: Treatment of Experimental Uremia by Means of Peritoneal Irrigation, J. Clin. Investigation **25:** 211, 1946.

[5] Frank, H. A.; Seligman, A. M., and Fine, J.: The Successful Treatment of Uremia Following Acute Renal Failure by Peritoneal Irrigation, J. A. M. A. **130:** 703 (March 16) 1946.

diazine sodium 0.1 Gm., heparin 0.5 mg. and penicillin 5,000 units. The solution was made up in 1 liter infusion flasks and was autoclaved, except that the sodium bicarbonate, sulfadiazine sodium, heparin and penicillin were withheld and added to each flask as it was used. It was feared that the latter constituents would not stand autoclaving, especially the sodium bicarbonate, which would decompose with the formation of toxic substances. The sulfadiazine and penicillin were included to combat infection, and heparin was added to prevent fibrin formation and adhesions. The insertion of the peritoneal tubes was a relatively simple procedure performed under local anesthesia, using two 30 F. mushroom catheters. The recommended flank position was impossible on the right because of the lumbar nephrectomy incision, so the right tube was placed through a high McBurney incision near the iliac crest. The left tube was inserted through the flank. The peritoneum was closed snugly around the catheters, the incisions were closed in layers with catgut, and the skin was closed with black silk. Both catheters were anchored to the skin with silk sutures.

The irrigating solution was attached to the right catheter, using a drip method by which the rate could be measured and controlled. A bacterial filter, though desirable, was not available. The arrangement was such that it was necessary only to handle the infusion flask and not to tamper with the connection of the tubing and catheter.

The left catheter was connected to a constant suction apparatus in the wall. Interposed in this system was a sterile 1 gallon (4.4 liter) bottle as a trap to catch the fluid. There was also a small, guarded air vent to prevent too forceful suction against any portion of the intestine.

The proposed irrigation rate of 1,000 to 1,500 cc. per hour could not be achieved. Inflow was easily possible at that rate, but not the outflow, which attained only about 500 cc. per hour. After great distention of the peritoneal cavity, the inflow had to be retarded to correspond to the overflow. The average irrigation was 500 cc. per hour for two days and 300 cc. per hour for the latter two days. The recovered washings were carefully saved for analysis.

Removal of the tubes was accomplished under light anesthesia with pentothal sodium.

REPORT OF A CASE

Mrs. M. E. K., a white woman aged 35, was admitted to the urological service, Grady Memorial Hospital, Atlanta, Ga., on June 12, 1946. Three weeks previously she had consulted her physician for pain in the right side of her abdomen and in her right flank, without urinary symptoms. He found a large mass in the right upper quadrant of her abdomen, and an excretory urogram revealed a large solitary calculus in the upper pole of an exceedingly large right kidney. She was subsequently admitted to this hospital.

Physical examination showed her to be in satisfactory general condition. The presence of a mass occupying the whole right hypochondrium and extending to a level 3 to 4 cm. below the umbilicus was confirmed. Her general appearance was that of chronic illness with some loss of weight.

Urologic examination revealed a poorly functioning right kidney with thick, purulent, offensive urine from it. The left kidney excreted normal urine and had good function. Retrograde pyelography indicated that the left kidney was anatomically normal but that the right was enlarged in all dimensions. There was pronounced intrarenal hydronephrosis, with an irregular calculus measuring 4 by 5 cm. occupying the upper calyx.

Laboratory studies were as follows: Catheterized bladder urine was normal except for innumerable pus cells and a strongly positive test for albumin. The examination of the blood showed mild anemia with a red blood cell count of 3.6 million and hemoglobin of 9.2 Gm. per hundred cubic centimeters. The white blood cell count was 6,000. The nonprotein nitrogen was 38 mg. per hundred cubic centimeters. The blood calcium and phosphorus determinations were normal on three successive days. Her blood type was 4 (O), Rh positive.

On the basis of these examinations, a right nephrectomy was performed on June 15, 1946, using cyclopropane anesthesia. Considerable difficulty was encountered in freeing the organ from surrounding structures, and severe bleeding ensued. In spite of transfusions of whole blood and plasma the patient suffered profound shock during the latter half of the operation. In the course of the procedure she received 1,500 cc. of type 4 (O) blood, Rh positive, and 600 cc. of blood plasma. For several hours after the operation the patient remained in mild shock, but her blood pressure returned to its original level within twenty-four hours, during which period she had been given another 500 cc. transfusion of whole blood, type 4 (O), Rh positive, and 500 cc. of blood plasma.

Decided oliguria was observed during the postoperative period. The output was 175 cc., 135 cc. and 20 cc. for the next three days, and these specimens contained both red cells and hemolyzed blood. A diagnosis of transfusion reaction, hemolytic type, was made. Severe involvement of the single left kidney was indicated by suppression of urine and rapidly increasing azotemia. The nonprotein nitrogen was 69 mg. per hundred cubic centimeters on the second day and 86 mg. on the third day postoperatively. The blood count was maintained at its original level by the transfusions, but the patient became stuporous with uremia. Infusions of isotonic solution of three chlorides and alkalinization with sodium bicarbonate given intravenously failed to promote the excretion of urine. Within three days the patient's condition had become critical.

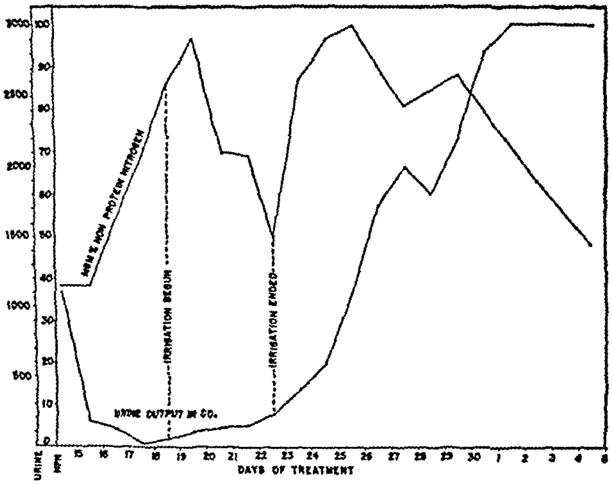

Fig 1.—Relationship of azotemia to urinary output.

Peritoneal irrigation was instituted on June 18, 1946 about eighty-four hours after nephrectomy. The procedure was initiated under local anesthesia and was well tolerated by the patient. Continuous irrigation was maintained for four days. Penicillin was administered parenterally during this period, and a Levine tube was kept in the stomach with constant Wangensteen suction. Each day 3,000 cc. of fluid was given intravenously in the form of isotonic solution of three chlorides and dextrose.

Beneficial results of this therapy were observed almost immediately. The azotemia receded from 86 to 50 mg. of nonprotein nitrogen per hundred cubic centimeters in four days, and the urinary output, which increased in four days from 20 cc. to 240 cc. per day, was now clear and not bloody. The patient made a remarkable clinical improvement also. She became oriented, alert and optimistic.

The peritoneal irrigation was discontinued on June 22, 1946 after four days of continuous use. The level of nonprotein nitrogen immediately rose again to 100 mg. per hundred cubic centimeters within three days, but the urinary output increased each day, up to 2,800 cc. on the twelfth day, by which time the nonprotein nitrogen had receded to 62 mg. per hundred cubic centimeters. By now the patient had made a striking recovery and was eating well and sitting up.

Examination of the recovered peritoneal washings on the second day showed that the urea content was 47 mg. per hundred cubic centimeters, and on the fourth day it was 53 mg. The urine which began to be excreted after resumption of renal function had a urea nitrogen level of 100 to 140 mg. per hundred cubic centimeters, and the specific gravity remained at 1.010 to 1.012. The day to day relationships of the nonprotein nitrogen level, the urinary output and the urea clearance through peritoneal washings are graphically presented in charts 1 and 2.

When the peritoneal tubes were removed, they were seen to be covered with an exudate, but the patient never showed clinical evidence of peritonitis. She had pronounced distention, but peristalsis was always heard. She was taking fluids by mouth throughout the illness, though for ten days there was suction applied to the stomach tube. Her temperature never showed a septic rise, but stayed below 100 F. A blood sulfadiazine level of 5 mg. per hundred cubic centimeters was reached by absorption from the peritoneal irrigation.

In the period of urinary suppression, progressive edema of the legs and trunk was noted and became well defined. There was moderate pulmonary edema with embarrassment of respiration, but this never appeared critical. Also during the height of azotemia there was acidosis, as manifested by a carbon dioxide combining power of 39 volumes per cent. Intravenous fluids were restricted to combat the edema, and sodium bicarbonate and 10 per cent dextrose were given for correction of the acidosis. Both the edema and the acidosis subsided satisfactorily after the resumption of renal function.

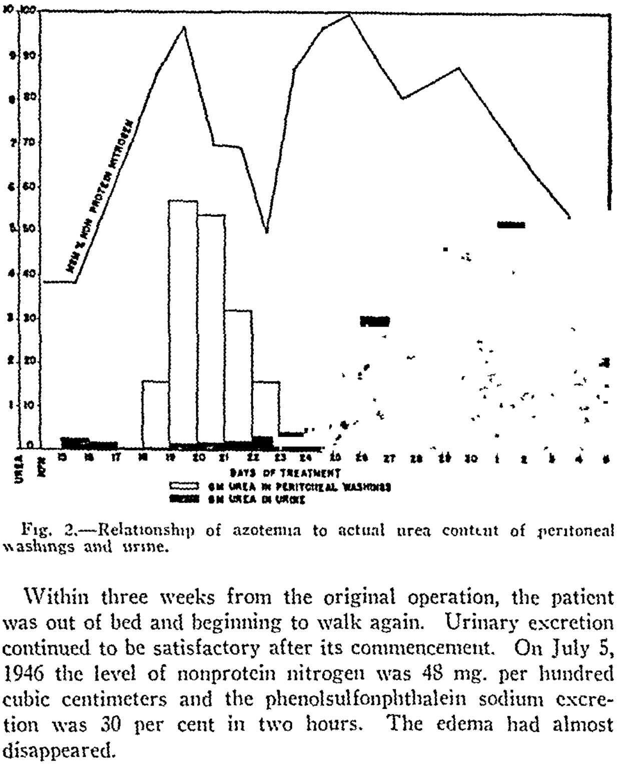

Fig. 2.—Relationship of azotemia to actual urea content of peritoneal washings and urine.

Within three weeks from the original operation, the patient was out of bed and beginning to walk again. Urinary excretion continued to be satisfactory after its commencement. On July 5, 1946 the level of nonprotein nitrogen was 48 mg. per hundred cubic centimeters and the phenolsulfonphthalein sodium excretion was 30 per cent in two hours. The edema had almost disappeared.

On July 12, 1946, one month after admission, the patient was discharged from the hospital. She has been followed for four months since that time and is doing well. She is gaining weight, feeling well and doing her housework. There is some residual impairment of renal function, as manifested by fixation of the specific gravity of her urine at 1.010 to 1.012 and by the phenolsulfonphthalein excretion of 40 per cent in two hours.

COMMENT

Peritoneal irrigation is a formidable procedure and not to be undertaken lightly, mainly on account of the risk of peritonitis. The decision to initiate this procedure was reached in this case because it appeared that the patient was going to die, which justified any lifesaving effort.

We cannot state definitely that the patient would have died or that she was saved by the procedure, but the results were decidedly striking. The azotemia began an immediate recession and the formation of urine was resumed. When the irrigation was suspended the azotemia quickly took an upward turn, which gradually decreased as the output of urine increased. The patient's recovery was the remarkable feature, since she had been expected to die, and this recovery appeared to be directly related to the irrigation.

The actual amount of urea recovered in the washings was small in comparison with that reported to have been recovered by others. The patient was a small woman; she received little protein in the three preoperative days and was receiving no protein during the peritoneal irrigation. The amount of urea removed was enough to reduce the nonprotein nitrogen level, and chart 2 shows that it was as high as the amount in the urine two weeks later, when renal function alone had reduced the nonprotein nitrogen level to 48 mg. per hundred cubic centimeters. This demonstrates that it was a significant amount.

The greatest problem technically in our experience was the outflow of the peritoneal irrigation. It constantly required attention and manipulation and never allowed the desired irrigation rate of 1,000 to 1,500 cc. per hour. Fine, Frank and Seligman[6] used a stainless steel suction tube with numerous perforations, which was placed through the flank and well down into the pelvis. This should be much more effective than the simple mushroom catheter.

The inflow never caused any difficulty. It had to be retarded to correspond to the outflow, so as not to overdistend the peritoneal cavity. A bacterial filter should be used in the inflow apparatus.

For the sake of others who might undertake the procedure for the first time, it should be emphasized that it is complicated and tedious. It requires full time special nursing and a great deal of time and attention on the part of the physician. Adequate laboratory facilities are almost indispensable.

Fluid balance and acid-base balance are probably as important as the reduction of the azotemia. Excess intravenous fluid produces edema, which may be disastrous in the lungs or brain. Acidosis is always present, and requires the administration of dextrose and alkali compounds. Electrolyte studies of the plasma were not made in this case, but they should be done with a view toward variation of the irrigating fluid to maintain the electrolyte balance.

SUMMARY

1. Peritoneal irrigation is confirmed as an effective method of treating uremia.

2. It has been successfully used in a case of acute renal failure due to transfusion reaction in a solitary kidney.

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[6] Fine, J.; Frank, H. A., and Seligman, A. M.: The Treatment of Acute Renal Failure by Peritoneal Irrigation, Ann. Surg. **124:** 857, 1946.

A Welter of Material Aids.—The impact of modern civilization and scientific progress has engulfed the physician in a welter of material aids, a maze of imposing buildings and a host of essential personnel that would bewilder a less intrepid soul. He must whet his education on the grindstone of endless mechanisms while balancing his diagnostic and therapeutic skills with the verdict of the laboratory or the latest gadget he must employ to keep up with the times. Liberated at last from empiricism, he must today chart a course between the auxiliary medical service he does not perform and fragmentation by specialization. In the modern practice of medicine, physicians shrink relatively in numbers within the rapidly expanding structure of his workaday world. Already surrounded, how long before he will be submerged by this intricate framework of innumerable ancillary and elaborately staffed, essential services? Superimpose government control, so imminently threatened, on this and the relation of the physician to the whole structure of medicine declines alarmingly in importance. Weaken the keystone of the arch and the entire structure is imperiled. Reduce the practitioner of medicine from his high estate of servant of the public and devotee of culture to the role of slave to government and the top-heavy superstructure cracks, topples, then comes crashing down on that public with devastating effect.—Abridged from the *Journal of the Florida Medical Association*, March 1947.

Council on Physical Medicine

The following article has been adopted by the Council on Physical Medicine:

The Council wishes to express its appreciation for the valuable cooperation of the Consultants on Ophthalmic Devices in reviewing this article. The consultants are Drs. Walter B. Lancaster, chairman; Thomas D. Allen, S. Judd Beach, Conrad Berens, Frederick C. Cordes, Alfred Cowan, William H. Luedde, Lawrence T. Post, Avery D. Prangen and Kenneth C. Swan. This paper was also submitted to the American Orthoptic Council and embodies the criticisms and suggestions of that council.

HOWARD A. CARTER, *Secretary.*

ORTHOPTICS

(Second Paper)

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Orthoptics deals with binocular vision. The orthoptic technician has to deal with the stumbling blocks to binocular vision which must be overcome in order to establish normal binocular vision. What are the obstacles to be overcome? Or, to put the same question in another way, what are the causes of orthoptic failure?

One can list the obstacles to normal binocular vision by determining to which of four main classes the patient belongs: 1. Is it possible for the patient to straighten his eyes or are there insuperable obstacles to binocular vision? 2. Can he learn to know what his eyes are doing? Can he recognize his errors in fusion? 3. Can he be comfortable fusing habitually? 4. Does he desire to use his eyes correctly? These will be amplified and explained, and then the three ways in which these problems can be attacked by the orthoptic technician will be enumerated and developed.

1. Is it possible for the patient to straighten his eyes—has he got it in him to straighten his eyes? If not, then his is not a case for orthoptics. Orthoptics deals only with cases in which there is no insurmountable obstacle.

It is not possible to tell by inspection whether the patient can or cannot straighten his eyes. The mere size of the deviation is surely not enough to warrant the assertion that he cannot, after suitable training, straighten his eyes; but it is often possible to say that if first he has some surgical intervention performed to reduce the deviation (*a*) he will be much better able to straighten them and (*b*) it will take less time to straighten them. This applies to certain types of deviation much more than it does to others.

Note that the reason why this patient will not be able to straighten his eyes is not for the orthoptic technician to give, although often her opinion may be extremely valuable to the ophthalmologist. But, essentially, the problem is up to the ophthalmologist. He may find congenital anatomic defects that preclude normal binocular vision as a habit: (*a*) Some of these are visual defects. A visual acuity below 6/20 does not make binocular vision with fusion and depth perception impossible of attainment on the major amblyoscope, but it makes the use of binocular vision in casual seeing as a habit decidedly improbable. (*b*) Some are orbital defects. (*c*) Some of the defects in the neuromuscular system are above the orbital and muscular level inside the cranium, perhaps nuclear or supranuclear. These are the defects that are difficult to find without prolonged work on the patient. Certain forms of paralysis are temporary and the patient recovers in a few months, leaving deviations which can be helped by orthoptics; but most paralyses belong in the class of insurmountable obstacles to binocular vision as far as orthoptics is concerned. Neither the orthoptist nor the ophthalmologist can always tell by inspection (i. e., by one or two careful and thorough examinations) whether or not there are insurmountable obstacles.

This is illustrated by the case of a young girl who had had five surgical operations and whose muscles were pronounced by the surgeon too attenuated for further surgical intervention until she was perhaps five years older. The technician found an esotropia of 20^{Δ}; after long treatment she was able to teach the patient to fuse and to read binocularly. At the time of reporting, the patient did not habitually fuse for distance yet her deviation was reduced to 10^{Δ} and with prisms base out she was well on the road to binocular vision. The ophthalmologist had definitely pronounced the case incurable.

Thus it is often impossible for surgeon or orthoptic technician to decide at once whether the case is one in which the patient cannot straighten his eyes after suitable treatment. And the inference is justified that as knowledge and skill increase the number of patients in this group will diminish.

2. Can he learn to recognize his errors of fusion? In order to correct them he must be aware of what he is to correct. This is the first step in orthoptic training in many cases. The patient must be taught to recognize diplopia. There are several tools or methods of dealing with it which will be taken up later. The important point now is to understand what is meant by the question: Can he learn to know what his eyes are doing? For example, when the eyes cross, diplopia should result; it does result in normal persons. Can this patient learn to see double? That is the first step in the process of teaching him to fuse and see single binocularly instead of seeing single by suppression, as is his habit.

3. Can he be comfortable fusing habitually? A patient may be trained to fuse on the synoptophore, but if he is to maintain fusion in casual seeing as a habit he must have the reflex of fusion reinforced by the satisfaction of comfort. He has been squinting and suppressing because it was the most comfortable way of seeing. It is not to be expected that he will adopt the new way of binocular single vision unless it is made a comfortable way.

This applies to patients with phorias in particular, since they do fuse, but the patients sent to the orthoptist complain of more or less severe discomfort due to

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This paper was written in response to a request from the Council on Physical Medicine for a second paper amplifying the original paper, "What is Orthoptics?" which was published Feb 16, 1946, by giving in more detail an account of the actual work performed by an orthoptic technician This is not an attempt to cover the whole field of orthoptics but an attempt to give as accurate and definite an outline as possible of some of the most important things an orthoptic technician has to do in her daily work, about which most medical practitioners have imperfect and inaccurate information. It is not to be expected that all will agree as to what functions to emphasize. We have presented those which we consider the most important.

the effort of maintaining fusion. Unless this can be overcome the case will have to be listed as a failure for orthoptics.

4. Does the patient desire to use his eyes correctly? This is a matter of motivation. Since taking a course of orthoptics, which often involves tedious work at home as well as frequent visits to the orthoptist, may be more of a task than the patient and his parents are willing to go through with, it is one of the stumbling blocks to success.

When the orthoptist receives a new patient the first important step is to classify the case to determine what problems are to be treated—in short, to make a diagnosis. But note that the important part of the diagnosis from an orthoptic point of view is what may be called the functional diagnosis rather than the anatomic diagnosis, which often is the chief interest of the ophthalmologist.

There are four ways of using the two eyes together: (1) normal binocular vision; (2) binocular vision with diplopia; (3) suppression, and (4) anomalous correspondence.

The first step is to ascertain the group in which to place a particular patient, since the treatment differs for the different groups. For example: A patient comes in with convergent strabismus. It is apparent that he is fixing habitually with his right eye and suppressing his left. The first orthoptic step is to deal with the suppression.

Of course, the ophthalmologist has not only previously examined the patient but prescribed glasses if needed and carried on treatment for amblyopia by occlusion until the vision has improved to the point where binocular vision is possible. Some ophthalmologists prefer to have the orthoptic technician take charge of the occlusion treatment, since it often requires attention to various details besides the occlusion, such as stimulating the use of the eye which is the laggard by various devices, such as pictures, movies and the like. Occlusion is of the greatest importance in two ways. First, by covering the good eye it compels the use of the amblyopic eye, thus causing the sight to develop in the poor eye, which otherwise would become permanently nearly blind—amblyopic. Occlusion is effective before 6 or 7 years of age during the years when the eyesight is developing. If treatment is postponed or neglected during this critical period, it becomes too late and treatment is usually of no avail. Esotropia can be corrected by operation at any time—even after 70 years of age, but if amblyopia is neglected sight may be gone forever.

In the second place occlusion is often necessary to prevent faulty use of the two eyes together, particularly in anomalous correspondence. While the patient is undergoing treatment by the orthoptic technician, who is aiding in the development of correct habits of binocular vision, it is important not to permit habitual faulty use of the eyes at home. Hence, occlusion of one eye is essential as a means of preventing the bad habits from becoming more and more deeply ingrained. To be most effective occlusion must be continuous, not merely for a few hours a day. After the vision has been brought up to about normal for the age and existing ocular conditions, it can be maintained by practicing occlusion a few hours a day.

There are several ways of carrying out occlusion. 1. The eye can be covered by a patch fastened with strips of adhesive or of Scotch tape. 2. The spectacle lens of that eye can be (*a*) opaque or (*b*) made blurry by rubbing soap on the surface or by stippling with varnish (fingernail varnish, for example) or by having the surface etched with acid. In these cases it is often desirable to prevent looking around the lenses by using leather or plastic fitted to shut off the peripheral vision, as some goggles do. 3. Atropine can be instilled in the eye, thus making distant vision somewhat blurry and near vision very blurry. The family physician should appreciate the importance of occlusion and use his influence to aid in enforcing it.

The same problem of suppression is found in a patient with exophoria, who often suppresses one eye as a way of escape from the great effort he must make to obtain binocular vision. Elimination of suppression is the first step toward relief. Similarly with an alternating strabismus. In fact there is nothing in the field of orthoptics so common and so important as suppression.

4. Anomalous correspondence is one of the common causes of trouble, and the orthoptic technician has to discover and attack this problem.

When one eye is fixating an object and the other eye is not doing so but is deviating, it sees the fixated object out of the corner of that eye and suppresses the image of whatever object is imaged on its fovea. If this occurs and is kept up during the years when binocular vision would normally be developed (before 6 years of age) it not only prevents normal binocular sensory relations from developing but it gives rise to an abnormal (anomalous) sensory relationship between the two eyes. Certain points of the two eyes which normally correspond (i. e., have the same directional value or see things in the same direction) no longer function that way; and when the new abnormal relationship is firmly established it is called anomalous correspondence. At times this is easy to correct, but more frequently its correction is difficult and sometimes even impossible. Thus it is one of the important stumbling blocks to orthoptic success.

What are the tools or measures available to the technician in dealing with the problem which she has found? The problems may be grouped under (*a*) suppression problems, (*b*) vergence problems and (*c*) problems of anomalous correspondence.

SUPPRESSION

The problem in suppression is to teach the patient to perceive—to become aware of—the image on the retina of the suppressing eye. The image is formed on the retina and the stimulus of the image gives rise to the sensation, but the sensation is suppressed and kept from reaching consciousness. With the major amblyoscope it is possible to present images and by suitable rotation of the arms of the amblyoscope to move the images on to the foveas of the two eyes. The patient may be able to see either one when the other is excluded, but when both are presented he probably will suppress one. The orthoptist must teach him to take notice of both. This may take many lessons or it may succeed almost immediately.

Suppression is a normal every day function of the central nervous system. In dealing with his problem of difficult binocular coordination the patient who solves the problem by suppressing the image seen by one eye is making use of a normal function, one which is extremely important in human behavior. Normal persons use it in dealing with physiologic diplopia which otherwise would be decidedly annoying. A most valuable tool in combating suppression is the arousing of awareness of physiologic diplopia, since this is only possible when two eyes are being consciously used. It thus becomes the first step back from abnormal suppression to *teach the child to recognize and become aware of physiologic diplopia.* It has the further great advantage that it can be practiced at home, and progress can thus be greatly accelerated. A striking object such as a white figure on the end of a stick is given the patient to look at. A red filter (glass, gelatin or plastic) before one eye makes the object red to that eye, while to the bare eye it is white. This makes it easier for him to recognize two objects, since the image is perceived by one eye as red, while the image of the same object is perceived by the other eye as white. There are many details to be observed in carrying out this exercise and in adapting it for use at home. A spot on the wall may be used if it is sufficiently conspicuous.

A second device or tool for combating suppression is bar reading, which has been developed into an effective form of exercise. The patient holds a black bar (a band of black pasteboard 20 mm. wide is suitable) a few inches in front of his nose, and he looks at (fixates) a picture on the wall. He should see two black bars, one on each side of the picture. This may take a little, or a good deal, of teaching before he succeeds. The same arrangement is used in looking at a book with pictures, perhaps of animals, which he can frame with the bar seen as two bars, if he can be made to recognize physiologic diplopia. To do this he must use both eyes. Thus he is learning the first step toward fusion—to stop suppressing and to use both eyes. He must first learn to see double and then learn to overcome the diplopia, not, as is his custom, by abnormal suppression but by fusion. Orthoptic binocular exercise cannot be begun until the patient has learned to fixate with each eye. One of the first exercises is teaching the child to hold fixation to the count of fifty with either eye at command. Children too young for this are too immature for orthoptics.

THE VERGENCES

Usually the most striking thing about a patient who has failed to develop normal binocular vision is the deviation of the eye which is not being used for fixation. It is a conspicuous blemish—a form of cross eyes. When an eye deviates the mechanism which should pull it into the correct position is the vergence reflex. If the eyes are diverging the action needed is more convergence. If they are converging *too much, the action needed is* more divergence. And if there is a vertical deviation, sursumvergence is needed. The angle between the visual axes is changed producing more convergence or less convergence, i. e., changing the vergence; hence they are called vergences.[1] Since it is the vergence power that corrects deviation it is obvious that orthoptists are much interested in vergences. Vergence problems, in fact, are second only to suppression problems in orthoptics. In dealing with vergence problems two measurements are vital. The first is the deviation, which should be measured, of course, by the ophthalmologist before he sends the patient to the technician. He has several ways of measuring it. The orthoptic technician also measures the deviation (which she calls "the angle"), generally using the major amblyoscope in a form of the cover test. She flashes the light first on one target, then on the other, and observes the movements of redress which the eyes make as each takes on fixation. Meanwhile the technician keeps changing the angle of the arms until no movement of redress is observable.

The second set of measurements includes the amplitudes of fusion. Starting with the arms of the amblyoscope set at "the angle" the patient is given targets which he can fuse (if he is capable of fusion) and one sees how far he can maintain fusion as the arms are slowly made to converge (or diverge) before the images separate and he sees double. Then the arms are moved slowly back until the images are fused again. The first reading is the "break" point, the second is the "recovery" point. Both are significant. The ophthalmologist uses the rotary prism (or prism bar) to measure the amplitudes of prism convergence and prism divergence in such cases. They are recorded as a fraction, the numerator showing the break point and the denominator, the recovery point.

The most important known cause of convergent squint is hypermetropia. It acts through the accommodation. In order to see clearly, the hypermetropic person has to correct his hypermetropia by accommodating (or by glasses); but accommodation is easier if convergence is done at the same time (accommodation convergence reflex, near reflex). Accommodation and convergence and contraction of the pupil constitute the near reflex. Accommodation and convergence are intimately but not inextricably linked together. Increase of accommodation carries with it increase of convergence. Reduce the accommodation and the convergence is reduced. The ophthalmologist takes advantage of this and prescribes convex lenses to reduce the necessity for accommodation and so to reduce the convergence. In a purely accommodative convergent strabismus this will correct the deviation. In any case it will reduce the convergence to the extent that the accommodation is the causative factor.

There are two problems for the technician in dealing with accommodative squints. The first is the correction of the residual convergence, which is not fully corrected by the convex lenses. The second is the interesting task of teaching the patient to keep his eyes straight without glasses. The first step in this latter task is to teach him to maintain fusion at the expense of accommodation, which means at the expense of seeing blurry. It is the accommodation which makes the images clear on the retina. If the accommodation is relaxed then objects become blurry. If the patient says he is seeing blurry, which means relaxing, then his pupils should dilate somewhat, since they are part of the near reflex. This is a valuable check on the reliability of the patient's statements. One may learn this relaxation readily, another may not. It is easier if the hypermetropia is not too large, which means that the blur is not so great when the hypermetropia is not corrected by the accommodation. The next and final step is to teach the patient to accommodate without converging. He must learn to dissociate accommodation and convergence. One way is to exercise the eyes on the amblyoscope—the other way is to work on objects in the room. One can start with objects at a distance of 6 meters which require the minimum of accommodation in the room. Then move the object 1 meter nearer. This involves but little more accommodation. Then 2 meters nearer, and so on. The eyes may gain rapidly until the object can be moved to 1 meter from the eyes without losing fusion by excessive convergence induced by the impulse to accommodate in the interest of clear vision, and then when it is moved near enough for reading they may snap into accommodation and so converge and lose fusion. This has to be practiced a long time in some cases, but final success is the rule. A similar innervational task is possible on the amblyoscope by inserting minus lenses, gradually increasing them. They call for accommodation and the arms of the amblyoscope may call for no convergence. Thus the patient gets practice in dissociating accommodation and convergence until he can maintain straight eyes and clear vision at the same time—a perfect cure.

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[1] When one eye alone is being considered its movements are adduction, abduction and so forth and are called ductions. Thus the right eye may be able to abduct 40 degrees and the left the same amount, so that the sum of abductions of the two eyes would be 80 degrees of divergence. As a matter of fact the two eyes can diverge in a normal person only 3 to 4 degrees, showing the fundamental difference between abduction and divergence. Unfortunately, the optometrists have adopted the term ductions as including convergence and divergence and vertical divergence movements. Many ophthalmologists have followed their lead and use the term ductions instead of the correct term vergences. Ductions is correct for optometrists—has the sanction of their leaders. Possibly it will be adopted by the next generation of ophthalmologists, many of whom are lax in their use of terms.

The form of vergence training most widely known is that which aims to increase the amplitude of convergence. The patient is directed to fix a pencil at arm's length and move it in the midline toward the nose until it is seen double because the eyes can no longer converge enough to keep the images on the foveas. The pencil is then moved to arm's length, and the process is repeated. This is done over and over for three to five minutes, several times a day. This is exercising the convergence with the aid of the accommodation, and it is called accommodation convergence. The pencil to nose technic has been amplified as follows (especially in convergence insufficiencies):

1. Move a pencil from arm's length toward the nose until diplopia results.

2. Jump technic: (*a*) Move it a little way toward the nose, close and open the eyes, move a step nearer and close and open the eyes. (*b*) Start at arm's length fusing; close the eyes, move nearer, open and fuse, close the eyes again moving the pencil still more, open and fuse; repeat until fusion fails. By the (*a*) method the patient is fusing while the object is being moved nearer; then the eyes are closed and opened, the patient trying to maintain fusion. By the (*b*) method the eyes are closed while the object is being moved nearer, then opened and fusion held if possible. Method (*b*) is a little more difficult than (*a*).

3. Move the pencil toward the nose until diplopia is reached, then remove the pencil but maintain diplopia of distant objects, i. e., maintain convergence. Care must be taken that the diplopia is homonymous. This can be checked by covering one eye to be sure that the image on the same side as the covered eye is the one that disappears—is homonymous. Or a red filter may be held over one eye to check to see which eye sees the red image; it should be the homonymous eye.

4. Produce voluntary homonymous diplopia at will, on command.

5. Hold the eyes crossed several minutes continuously, perhaps listening to the radio to help pass the time, which seems very long to be holding convergence.

6. Look at a distant object and produce voluntary crossing of the eyes with homonymous diplopia.

One reason the pencil to nose technic is not more effective and does not always produce satisfactory results is because the patient (and the physician, too) does not realize the supreme importance in this exercise of definitely recognizing the diplopia which always occurs when the pencil gets too near for fusion provided that the patient is using both eyes. It is curious how often a patient may go on moving the pencil forward and backward day after day with no improvement. The reason is that he does not attend to and recognize the diplopia. Since he does not notice it he must be suppressing. Since he suppresses he does not use both eyes, therefore he does not improve. Another reason it lacks effectiveness is that what the patient needs is ability to converge without the aid of accommodation, as under heading 6 in the preceding technic. For instance, if the patient has an exophoria for distance, this is overcome by convergence; but if the gaze is fixed on distant objects accommodation is not called for, so he must converge without accommodating. Better results are obtained by exercising the convergence without the accommodation either on the amblyscope by converging the arms or at home by the use of exercise prisms. For example, if the patient has an amplitude of 12/4 diopters of prism convergence, he is given a pair of prisms mounted for convenience in holding them on a spectacle frame without temples.

He may begin with prism 4^{Δ} base out for both eyes, making a total of 8^{Δ}. When this is held before the eyes close to the glasses he is wearing it will make an object across the room appear double, but the fusion stimulus will tend to correct this and make the object appear single by converging the eyes 8^{Δ}. If he cannot fuse an object across the room he must move nearer to it; at a distance of 1 meter he probably will be able to fuse it, aided by winking a few times. Then holding the fusion he walks slowly backward and probably can hold fusion until he moves as far as the room permits. Then the prisms are raised and the object for a fraction of a second is seen double, quickly coming together as he makes the necessary divergence needed to fuse it. Then the prisms are held in front of the eyes again and the process is repeated for three to five minutes, ten times a day or as near ten times as the orthoptist believes the patient is likely to do it with some urging. When the 4^{Δ} prisms are readily overcome the power is increased to 6^{Δ}, then 8^{Δ}, then 10^{Δ}.

This is an exceedingly effective way to improve the convergence amplitude. A similar technic with prisms base in is used for developing divergence amplitudes.

The diplopia technic is also adapted for divergence. The patient fixates a distant object and holds a pencil before the nose. The pencil should be seen double; the diplopia is crossed because the eyes are diverging relative to the distances of the pencil and wall. Then he practices seeing the pencil double at longer distances. A picture may be pasted on the window and seen double when looking at a distant object through the window. Care must be taken that the diplopia is always crossed, which means that the eyes are diverging. When he can back away from the window across the room and keep crossed diplopia, then he should practice the jump technic, closing and opening the eyes and still maintaining the divergence with crossed diplopia and finally diverging at will on command. These two forms of exercise, the prisms held before the eyes while fixating far and near and the learning of voluntary diplopia, homonymous or crossed according to whether convergence or divergence is wanted, are the effective tools for increasing vergences.

ANOMALOUS CORRESPONDENCE

For the treatment of anomalous correspondence one must have a clear idea of the conditions that exist in a patient with this entity. In the first place he is suppressing the images formed on the fovea of the deviating eye. This suppression must be overcome. He must have perception of the image on this fovea aroused and brought to consciousness.

Second, he has anomalous perceptions of images formed on some extra foveal parts of the retina. These must be suppressed. As a matter of fact they usually are suppressed. It is difficult or impossible to arouse physiologic diplopia in many patients, although this would be possible if they were using an extra foveal retinal area as a so-called "false macula." Sometimes monocular diplopia can be elicited. This occurs when the image on the extra foveal area is not only perceived but it is doubly perceived; i. e., it is seen—perceived—in its proper direction and also seen—perceived—in an anomalous direction. In this case the task is to stimulate and establish the normal perception and erase the anomalous one. In arousing the dormant normal foveal response the fovea must be stimulated in unusual ways in order to be effective. Monocular flashing and massage of the macular area are used, but by far the most effective procedure is locking the arms of the amblyoscope at the true angle so that the images are both on the foveas of the respective eyes and then oscillating the arms vigorously through an angle of 30 to 45 degrees as rapidly as possible, several times a second. Note: The mistake is often made of oscillating through too small an angle.

Many patients will respond in a short time to this. In fact if the patient does not respond in the very first lesson the prognosis is not good—not much can be expected even in fifty or one hundred lessons. This is apt to be the case in an older patient (over the age of 12), for whom it is often the wisest plan (in the present stage of the knowledge of orthoptic technic) to advise surgical cosmetic cure and to abandon binocular vision. The use of occlusion is important in certain cases. When that can be dispensed with, however, treatment can be used which cultivates true diplopia, using great care that the patient is not cultivating the false diplopia which is a fundamental tendency in anomalous correspondence.

SUMMARY

To summarize the task of the orthoptist:

1. Be sure that the patient has sufficiently good vision in each eye. Too great a difference in vision between the two eyes is an insurmountable obstacle to the habitual use of the eyes in normal binocular vision.

2. The patient must learn to fix with either eye at command and hold fixation for the count of fifty. Until he can do this he has not reached the age of readiness. Orthoptic efforts are wasted on a patient who is not yet far enough developed to be able to fix with each eye.

3. In most patients the first step toward binocular vision is learning to overcome suppression. Suppression is the patient's way of escape from the difficulties of binocular vision. To retrace the steps he has taken in the wrong direction away from binocular vision, he must learn to see double—learn physiologic diplopia. This may be easy in some cases but long and arduous in others. The skill of the orthoptist has full play here.

4. The patient must begin to use his two eyes together. One of the devices of great value in learning to use both eyes is bar reading. A simple form of framing pictures with a bar held in the hand can be used before the patient has learned to read. His progress will be much more rapid if he is old enough to have learned to read.

The time element, the age of readiness, is of enormous importance Often a child has been subjected to orthoptic treatment for many months before a certain goal has been reached, and a sober appraisal of the results will show that all the progress has been made in the last few weeks after the patient had attained the degree of development which made him ready for the task. All the time devoted to working at the task before the age of readiness could well be saved by not attempting the impossible. Of course, the difficulty is in knowing when this age has been reached. This is one of the things which future progress in the art will make clearer.

5. Meantime, the patient may have anomalous correspondence. If so, this must be corrected. The danger is great of confirming the bad habit instead of curing it by urging the patient to try binocular vision without carefully controlling the methods he uses. Often occlusion has to be used. In some cases it is not worth while to try to overcome anomalous correspondence.

6. When the patient has learned to use his two eyes separately without suppression it is time to see if he can fuse the two images. There is no way to compel fusion. One can present conditions on the major amblyoscope calling for fusion, two images of the object fairly near together and well adapted for fusing into a single image, then if he can fuse he will. The innate impulse to escape diplopia by fusion is what one has to rely on. If he does not do it the first time he may do it the one hundredth time—one has to persist.

7. Amplitudes of fusion must be developed by vergence exercises, of which there is a variety. The philosophic or theoretic basis of orthoptics consists in setting up a situation and putting the patient in a place where he must respond; making the response satisfying (reinforcing the reflex, writers on conditioned reflexes call it); making unsatisfactory responses unsatisfying to the patient, and repeating the satisfactory response often enough so that it is well established.

With the major amblyoscope, the orthoptic technician has the situation firmly under control. There are no extraneous stimuli entering the situation. The technician can control the lights and movement of the instrument and can control the stimulus by the choice of targets so that the patient is almost forced to make a correct response. Once he makes that response he is praised for it and encouraged to repeat it. Thus the patient learns. This is orthoptics.

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SATURDAY, APRIL 19, 1947

TROPICAL DETERIORATION

Many people who live in moderate climates believe that tropical climate has a baneful influence on white persons. Men of letters (Kipling, Conrad, Maugham) as well as some students of tropical medicine have expressed similar beliefs. Rogers and Megaw list among contributing causes of "tropical neurasthenia" hot climate, especially when monotonously wet and continuous, and depressing environment with absence of congenial society, poor food and deficient or excessive exercise. Reed [1] described one form of tropical neurasthenia in which patients complain of asthenia, anorexia, easy tiring, palpitation, languor, variable abdominal pains, often unexplained nausea, vomiting and diarrhea. The systolic blood pressure is below normal. The early experiences of our armies in the jungles of Malaya, Burma and the Southwest Pacific strengthened the belief in a specific deleterious, harmful effect of tropical climate on white men. With the development, however, of effective methods for control of malaria, dysentery, heat disturbances and other tropical dangers by the use of new drugs, new methods of controlling insects and infectious diseases, scientifically tested tropical clothing and adequate amounts of water, salt and food, most of the hazards of fighting in the tropics were successfully combated.

Surveys on the health of troops in the tropics made in 1945 by two separate teams [2] throw an interesting light on the importance of nutrition in combating tropical deterioration. The Canadian unit operated in India and Burma, where it studied Indian soldiers exclusively. The United States unit operated in the Central, South, Southwest and Western Pacific, where it studied United States troops, both white and colored. Both teams collected systematic information on feeding policies and practices, on the diet of individual soldiers and groups of soldiers, on health as determined by medical histories and physical examinations, and on physical fitness. Samples of the urine and blood of each person were analyzed in specially constructed field laboratories. The results of these surveys were interpreted by comparing them with data collected in two large scale ration trials conducted under rigidly controlled field conditions during 1944 in North America. The observations in the ration trials were made by the same methods used in these surveys, and 2 members of each survey team had participated in both North American trials. The average nutrient intake was of the same order of magnitude as that for garrison troops in the Pacific and United States troops in training camps in the United States. Scores in tests of physical fitness were at a high level in troops who had recently survived in combat and were less good in rear areas. Distribution curves for the data on hemoglobin, plasma protein, urinary chloride, urinary ascorbic acid, urinary thiamine and urinary riboflavin were similar for United States troops in the Pacific and United States and Canadian infantry in North America. On the basis of clinical findings and biochemistry, cases of classic nutritional deficiency syndromes were not seen. Skin diseases, especially heat rash and epidermophytosis, were common, more so in forward than in rear areas. Moderate weight loss averaging up to 10 pounds was found in troops recently in combat but not in garrison troops. Among United States troops under stress of combat compared with those not exposed to stress, complaints referable to the skin, gastrointestinal tract and neuromuscular systems were more frequent, as were positive physical findings. Their weight was lower, but biochemical status was about the same and physical fitness was actually higher in the groups under stress.

In the present surveys many areas were visited in which good health had been maintained among adult populations when diet was ample and tropical diseases were well controlled. White troops were efficient after continuous presence for as much as two years in severe tropical environments. Under certain well recognized types of stress not peculiar to the tropics, men react and deteriorate similarly in tropical, temperate and cold environments. The surveys stress the importance of variety of food items, foods similar to those the soldier usually eats in ordinary life, the avoidance of caloric deficits and high acceptability insured by good preparation. The proponents of a large intake of vitamins or a low intake of animal protein are not supported by any of these data.

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[1] Reed, A. C.: Tropical Neurasthenia, Am. J. Trop. Med. **22**: 127 (March) 1942.

[2] Canadian group, Kark, R. M., Aiton, H. F., and Pease, E. D.; United States group, Bean, W. B., Henderson, C. R., Johnson, R. E., and Richardson, L. M.: Tropical Deterioration and Nutrition, Medicine **26**: 1 (Feb.) 1947.

TRANSMISSION OF POLIOMYELITIS TO RODENTS

Direct transmission of poliomyelitis virus from man to mice by the adjuvant use of autolyzed mouse brain tissue was reported recently by Milzer and Byrd[1] of the Michael Reese Research Foundation in Chicago. Most attempts to infect routine laboratory animals with monkey passage strains of poliomyelitis or with infected human tissues failed until 1939. Then Armstrong[2] was able to adapt the Lansing strain from monkeys to cotton rats and from the latter to white mice. Successful adaptation of a few other monkey passage strains by the same technic have been reported,[3] though most attempts to establish monkey passage strains in rodents have been unsuccessful.[4]

In harvesting brains and cords from mice paralyzed following intracerebral injection with the Lansing virus, Milzer observed that autolyzed brain tissue removed from mice left in their cages seven to eight hours after death appeared to accelerate the incubation period in passage mice. The autolyzed brain tissues were bacteriologically sterile. Preliminary experiments showed that the same acceleration could be produced by adding sterile, autolyzed brain tissues from normal mice to stock virus suspensions. Control mice and cotton rats inoculated with the autolysate alone remained normal.

Tests were made as to whether or not autolyzed brain tissues would make possible a direct transfer of monkey passage virus to the white mouse without intermediary passage through the cotton rat. Bacteria free autolyzed brain tissues were obtained from normal mice killed by trauma and kept at room temperature for sixteen hours. Ether was not used for killing, since it seemed to interfere with autolysis. A 10 per cent suspension by weight was made in nutrient broth, which was afterward freed from large particles by filtration through sterile gauze. The reaction was finally adjusted to p_H 4.00 by the use of the Hammon[5] buffer solution.

Ten per cent infected cord suspension from the twelfth monkey passage Leon strain was mixed with an equal volume of brain autolysate and injected intracerebrally into 8 mice. One mouse developed typical paralysis of both front and hind legs by the fifteenth day. This animal was killed. Its brain and cord suspension was mixed with autolyzed brain solution and used to inoculate a second group of 8 mice. These mice developed typical paralysis in from eight to thirty-two days. A fourth passage was similarly made, and all the mice developed typical paralysis in from four to seventeen days. By the fifth passage the incubation period was reduced to from two to nine days. Lesions typical of poliomyelitis were demonstrated on microscopic examination. By the sixth passage the virus was completely neutralized by human immune serum globulin, while control mice developed typical paralysis. Cross immunity tests showed that Lansing immune mice were immune to the Leon strain. Leon immune mice, however, did not show immunity to the Lansing strain.

The autolyzed brain technic was then used for direct transmission from human cases to white mice. Several strains of poliomyelitis virus from infected human feces and spinal cords have thus far been successfully transferred to Swiss mice. Immunochemical typing of these strains is now in progress. The development of a successful polyvalent vaccine is the apparent ultimate aim of the research.

THE THIRD NATIONAL CONFERENCE ON HEALTH IN COLLEGES

On May 7 to 10 representatives from the colleges and universities of the United States will meet in New York City to confer on means of improving the health teaching, the health service and the physical education in our colleges. This Conference on Health in College, coming after the disorganization attending the war and in the midst of the emergency created by the unprecedented postwar college enrolment, promises to be of interest and importance.

From the point of view of medicine much is at stake in this conference. Here is an opportunity to emphasize the place of the college in giving students a knowledge of health and enthusiasm for physical fitness and preventive medicine. If the discussions center about providing students with clinical treatment and hospital care the conference will have failed in its true objective. A college health program can consist merely of an infirmary to which students go when they are too ill to attend classes or it can serve properly in an institution of higher learning to magnify the educational and preventive aspects of a health program. The armed services took many physicians, health teachers and physical educators from our colleges. Some institutions faltered in their health educational and preventive medical efforts during the war years under the necessity of meeting the urgent problems of the sick student. Now the colleges may again be able to take the long range view of their health responsibilities and opportunities and provide health programs designed to turn out graduates who will be leaders in the battle for well organized public health services, efficient sanitation and modern medical care and hospitalization.

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[1] Milzer, Albert, and Byrd, C. L., Jr.: Science **105**: 70 (Jan. 17) 1947.

[2] Armstrong, Charles: Pub. Health Rep. **54**: 1719 (Sept. 22), 2302 (Dec. 29) 1939.

[3] Jungeblut, C. W., and Sanders, M.: Proc. Soc. Exper. Biol. & Med. **44**: 375, 1940. Toomey, J. A., and Takacs, W. S., ibid. **46**: 22 (Jan.) 1941.

[4] Hammon, W. M.: Proc. Soc. Exper. Biol. & Med. **45**: 124 (Oct.) 1940. Kramer, S. D.; Mack, W. N., and Himes, A. T.: Pub. Health Rep. **56**: 581 (March 21) 1941.

[5] Hammon, W. M., and Izumi, E. M.: Proc. Soc. Exper. Biol. & Med. **48**: 579 (Dec.) 1941.

In those colleges which consider themselves in loco parentis and therefore obligated to provide medical care, the student health service can be organized on the basis of voluntary prepaid medical care and hospitalization insurance and be an educational experience of real value to the student. Some state institutions, with a medical school faculty available and taxpayers footing the bills, find it easy to ignore the educational implications and provide complete medical care without any effort to relate the costs of the service to the student health service fee. This is spoon feeding medical care to the few chosen for a college career. Many develop the erroneous notion that such services are naturally owed them at little or no cost. In the coming conference the educational implications of the medical services provided our college students should also be given careful study and analysis.

Current Comment

DISSOLUTION OF SUBSTANCE OF TEETH BY LEMON JUICE

Stafne and Lovestedt[1] report observations on 50 patients who were using lemon juice routinely and who showed evidence of dissolution of dental structure. Thirty-nine of these were women and 11 were men, a ratio of approximately 4:1. The patients came from twenty-two states, two Canadian provinces, Mexico and Puerto Rico; apparently such use of lemon juice is widespread. Striking uniformity was recorded as to the manner in which lemon juice was taken, namely by interval feedings in water. Use of lemon juice in self treatment was most common among persons who were suffering from rheumatism. The juice was also used for constipation, to prevent and relieve colds and occasionally as a tonic. When used as a reduction diet, the juice most often replaced entire meals. Most patients were aware of the high vitamin C content of lemons and desired an adequate intake of that vitamin. Defects in enamel produced by action of acid solutions are recognized by rounded margins in contrast to defects produced entirely by mechanical wear, which have sharper margins. The projection of fillings above the surface of the teeth is probably of greatest diagnostic value. These observations emphasize that extensive dissolution of dental structure may occur as a result of drinking lemon juice, particularly if the juice is taken daily and at times other than with meals. An adequate amount of vitamin C can be had without resorting to improper use of lemon juice. In view of its harmful effects on the teeth, the Rochester physicians say that use of lemon juice as a daily drink in any appreciable concentration should be discouraged.

CHANGES IN ARMY TRAINING PROGRAM FOR MEDICAL OFFICERS

The chief of the personnel division in the Surgeon General's Office, Col. George E. Armstrong, recently discussed[1] the army graduate training program. The professional prospects for new medical officers appear improved since Congress authorized a total increase in commissioned officers from 25,000 to 50,000. Of this number the medical department requirement was said to be 5,750, of whom 2,750 would be commissioned in the Medical Corps. The increase would radically change the ratio of Medical Corps officers to the so-called administrative group. The ratio in 1941 was about 17 medical to 1 administrative officer, while under the proposed breakdown of the Medical Department ceiling the ratio will be 1.67 medical to 1 administrative officer. Obviously the chances that a young medical officer would practice medicine in the Army will be much greater. The War Department proposes, Colonel Armstrong said, to eliminate the former haphazard method of training, assigning and retraining the army officer. The new officer will attend basic branch schools and be assigned where the type of professional career for which he is best suited can be ascertained. The War Department has stated that the basic interest of the Army and of the officer will be served by keeping officers who are trained scientists or technical experts in one line of endeavor for the greater part of their entire service. This program should go a long way toward making the Army more attractive for the young physician.

DUSTING POWDERS FOR RUBBER GLOVES

In reporting the results of an investigation on the pathologic changes produced by the deposition of lycopodium spores in human tissues, Antopol[1] in 1933 recorded an incidental case of peritoneal foreign body granulomas due to talcum that had been introduced presumably as a dusting powder on rubber gloves. His observations have since been confirmed and extended by other investigators to include peritoneal adhesions followed by intestinal obstruction and by foreign body granulomas in the rectum, vagina, cervix, brain and healing wounds; the implantation of talcum powder may be regarded as a surgical menace. Seelig, Verda and Kidd[2] have advocated the substitution of potassium bitartrate as being both harmless and efficacious. However, in powdering rubber gloves with potassium bitartrate, unless proper methods are used, especially in sterilization, the results are certain to cause deterioration of rubber gloves. When the standard technic of sterilization is followed and both the powder and the powdered gloves are subjected to 15 pounds of steam pressure for fifteen minutes, the results are uniformly favorable. If too much heat is applied or if the gloves and powder are exposed too long to the proper degree of heat, the gloves are ruined and the dusting effect of the powder is destroyed.

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[1] Stafne, E. C., and Lovestedt, S. A.: Dissolution of Substance of Teeth by Lemon Juice, Proc. Staff Meet., Mayo Clin. **22**:81 (March 5) 1947.

[1] Bull. U. S. Army M. Dept., February 1947, p. 167.

[1] Antopol, William: Lycopodium Granuloma, Arch. Path. **16**:326 (Sept.) 1933.

[2] Seelig, M. G.; Verda, D. J., and Kidd, F. H.: The Talcum Powder Problem in Surgery and Its Solution, J. A. M. A. **123**:950 (Dec. 11) 1943.

ORGANIZATION SECTION

Washington Letter

(From a Special Correspondent)

April 17, 1947.

President Truman Designates May 1 Child Health Day

President Truman proclaimed May 1 Child Health Day. Contrary to usual custom emphasis is being placed on guarding children against accidents. Miss Katherine F. Lenroot, head of the United States Children's Bureau, explained that accidents take an annual toll of almost 20,000 boys and girls under 20. The majority of such deaths are said to be preventable. During the week beginning April 27, efforts will be made to get facts on home accidents before parents. The Social Security Administration and the Federal Security Agency are assisting in this work in cooperation with the National Conference on Home Safety.

Permanent Nurse Corps Legislation

Legislation creating a permanent Nurse Corps in the Army and Navy and a women's medical specialist corps in the Army passed the Senate and was sent to the White House for signing by President Truman. At the present time, Army and Navy nurses hold temporary commissioned rank. Without new legislation at the end of the war emergency they would revert to prewar pay of $1,080 to $1,800 a year, and the services would have been unable to retain their nurses on this pay scale. The new legislation will commission nurses on a permanent basis, as it does male officers, and grant corresponding allowances and benefits. The women's medical specialist corps includes physical therapists, dietitians and occupational therapists.

Washington newspapers followed up the controversy created when Dr. Claude W. Munger, director of St. Luke's Hospital, New York, a past president of the American Hospital Association, accused nurses of having a "to-hell-with-patients" attitude. He reiterated charges made at a hospital conference in Roanoke, Va., and said there had been a changed attitude on the part of nurses toward patients after the American Nurses Association adopted an economic security program last September. Miss Ella Best, executive secretary of the A. N. A., denied the charges and called them unfair and ill advised.

Traffic Regulations for Car-Driving Amputees

Major Gen. G. B. Erskine, former head of the Retraining and Reemployment administration who has returned to the U. S. Marine Corps, wrote to George E. Keneipp, D. C. Director of Vehicles and Traffic, urging that some traffic restrictions be lifted for autodriving amputees. General Erskine stated: "It is my understanding that in both Seattle and New York the office of the Traffic Director, after due investigation, issues windshield cards and passbook cards of a similar nature, instructing traffic officers to exercise leniency in favor of automobiles driven by amputees in restricted areas."

Hearings on Water Pollution Control Bill

Open hearings will be held this month on a bill to provide for water pollution control activities in United States rivers. Chairman Revercomb of the Senate Public Works Committee said the measure was important enough to require public hearings. The bill is a bipartisan measure sponsored by Senator Barkley, Democrat of Kentucky, and Senator Taft, Republican of Ohio. It provides for federal aid for treatment works construction to prevent the discharge of pollution into rivers. The U. S. Public Health Service would survey specific problems of water pollution.

Gain in Births

The Census Bureau released preliminary figures estimating a total of 3,440,000 births in the United States last year, to boost the nation's population to an all time high of 141,000,000.

Commemorative Postage Stamp Will Honor Doctors of America

Postmaster General Robert E. Hannegan announced that a commemorative 3 cent postage stamp honoring the physicians of America will be issued by the Post Office Department next June 9. The special issue will come out on the hundredth anniversary of the founding of the American Medical Association. The public will be given details later of the place of sale and description of the stamp.

Encourage Employment of Nation's Disabled

The new National Association for Employment of the Handicapped will seek to carry on after the Retraining and Reemployment Administration closes June 30. The group elected Vice Admiral Ross T. McIntire, interim vice president. The former retraining administrator, Major Gen. G. B. Erskine, has resigned effective April 12 as administrator to return to the U. S. Marine Corps.

Medical Legislation

STATE LEGISLATION

Arizona

Bill Enacted.—H. 206, which has become chapter 130 of the laws of 1947, provides for the licensing, regulation and **inspection of hospitals** within the state.

Arkansas

Bill Enacted.—H. 299, which has become Act no. 326 of the Acts of 1947, provides that **all school employees** shall, biennially, produce a certificate issued by a regularly licensed physician or regularly constituted health authority certifying that such individual is free from any and all forms of contagious or infectious diseases, including tuberculosis, and that the status of such individual regarding tuberculosis has been determined by an x-ray examination.

California

Bill Passed.—S. 972, which passed the senate April 1, proposes, among other things, to authorize the state **board of chiropractic examiners** to approve chiropractic schools and colleges whose graduates may apply for licenses in the state and to set forth certain requirements which schools must meet in order to be eligible for such approval.

Colorado

Bill Passed.—H. 895, which passed the house March 28, proposes to appoint the Colorado State Department of Public Health as the sole agency for carrying out the purpose of the **federal hospital construction** act and to require the governor to appoint a state advisory hospital council.

Bill Enacted.—S. 453, which was approved March 24, amends the law relating to the **practice of chiropody** by defining the practice of chiropody as "the diagnosis and medical, surgical, mechanical, manipulative and electrical treatment of ailments of the human toe, foot and leg, excepting any amputation and excepting the administration of an anesthetic other than local."

Delaware

Bill Passed.—H. 42, which passed the senate March 31, proposes to require all persons desiring to obtain a **marriage license** to obtain a certificate from a duly licensed physician showing that the applicant has undergone a standard serologic test for syphilis and is not infected with such disease in a stage which may become communicable to the marital partner.

Bill Enacted.—H. 9, which was approved March 25, amends the law relating to the **care of the blind** by requiring every health and social agency, attending or consulting physician or nurse to report to the Delaware Commission for the Blind, in writing, the name, age and residence of persons who are blind.

Idaho

Bill Enacted.—H. 219, which has become chapter 271 of the Laws of 1947, is an enabling act for the formation and **regulation of nonprofit corporations** organized to render medical, surgical and/or hospital service on a membership fee plan.

Illinois

Bill Introduced.—H. 315 proposes the enactment of a **hospital construction** act and authorizes the director of the state department of public health to direct the hospital construction program in the state.

Iowa

Bill Introduced.—S 469 proposes to require all physicians to report immediately to the health officer in writing the name, age and address of every person diagnosed as a case of **epilepsy** or similar disorders characterized by lapse of consciousness.

Bill Passed.—H. 465, which passed the house March 24, proposes a **hospital licensing law.**

Kansas

Bill Introduced.—H 83, **to amend the food and drug act,** proposes to limit the sale of aminopyrine, barbituric acid, pituitary, thyroid, sulfonmethane or their derivatives, to sale on prescriptions signed by a member of the medical, dental or veterinary profession who is licensed by law to administer such drugs

Bills Passed.—H 67, which passed the senate April 1, proposes the enactment of a **hospital licensing law.** H 399, which passed the senate April 1, proposes the enactment of a **hospital survey and construction act** requiring a survey of existing hospital facilities and the preparation of a program for the construction of additional needed facilities The proposal also provides for the appointment of an advisory hospital council and authorizes the application for and receipt of federal funds to assist in the survey and construction activities within the state.

Maine

Bill Enacted.—S. 293, which was approved April 4, 1947, authorizes the local health officer to provide annually for the **free vaccination** of all inhabitants within his jurisdiction and to provide for free inoculation against diphtheria and whooping cough of all children under 12 years of age

Maryland

Bills Passed.—H J R 16, which passed the house March 22 and the senate March 27, proposes the appointment of a commission to study **medicolegal psychiatry** in the state H 52, which passed the house March 29, proposes to amend the medical practice act by exempting therefrom persons treating human ills in accordance with the tenets of **Christian science,** even though an adequate charge for such service is paid H 83, which passed the senate March 29, proposes to **amend the chiropractic act** by among other things, defining chiropractic as "diagnosis, the location of disaligned or displaced vertebrae of the human spinal column the procedure preparatory to and the adjustment by hand of such misaligned or displaced vertebrae of the spinal column and its articulations, by any method not including the use of drugs, surgery or obstetrics, osteopathy, optometry or podiatry, or any branch of medicine for the purpose of relieving such interference and aiding in the restoration of health, providing that nothing herein contained shall be construed to prohibit the use of by any licensed Chiropractor of all necessary electrical, mechanical, dietetic and sanitary measures incident to the care of the human body, for the purpose of relieving such interference" H. 663, which passed the senate March 29, proposes to designate the **state board of health** as the sole agency to represent the state of Maryland in obtaining benefits under the federal hospital survey and construction act and proposes also to authorize the governor to appoint an advisory council on hospital construction S 209, which passed the house March 31, proposes the granting of **free scholarships** to the medical school of the University of Maryland S 358, which passed the senate March 27 and the house March 28, proposes to exempt from the medical practice act **Christian science practitioners** duly registered in the *Christian Science Journal* of the Christian Science Publishing Society, Boston.

Massachusetts

Bill Introduced.—H 1870, proposes the repeal of the existing law providing for the **licensing of maternity hospitals** and the enactment of new provisions which would require the licensing and regulating of all hospitals within the state

Bill Passed.—H 1919, which passed the house April 3, proposes that any person who was a resident of the commonwealth for a period of five years prior to July 1, 1941, who matriculated at any medical school in the commonwealth prior to said date and who since that time received a degree of doctor of medicine from such school shall **be eligible to apply for registration** as a qualified physician, shall be examined by the board of registration in medicine and shall be subject to all the provisions of the law relating to such eligibility and examination

Michigan

Bill Introduced.—S 201 proposes to authorize the state commissioner of health to regulate and promulgate rules and regulations controlling the **humane use of animals** for the diagnosis and treatment of human and animal diseases, the advancement of veterinary, dental, medical and biologic sciences and the testing and diagnosis, improvement and standardization of laboratory specimens, biologic products, pharmaceuticals and drugs The proposal would further require that no person, firm or corporation shall keep or use animals for experimental purposes unless registered to do so by the state commissioner of health.

Nevada

Bill Passed.—S 128, which passed the senate March 19, proposes that whoever experiments or operates in any manner whatsoever on any living **dog or cat** for any purpose other than to heal, cure or sterilize said dog or cat shall be punished by a fine of not less than $100 nor more than $500 or by imprisonment for not less than three months nor more than one year, or by both such fine and imprisonment.

Bills Enacted.—S 52, which has become chapter 230 of the Laws of 1947, amends the law relating to the state board of health by authorizing the state department to create a **division of preventive medical services,** together with such other divisions, subdivisions or bureaus as are and may be necessary for the prevention of disease, the prolongation of life and the promotion of the physical health and mental efficiency of the people of the state of Nevada. S 55, which has become chapter 98 of the Laws of 1917, amends the medical practice act by authorizing the state board of medical examiners, in its discretion, to issue permits to any properly qualified applicant to serve as **resident medical officer** in any hospital in Nevada subject to certain provisions. Such temporary licentiate would be authorized to practice medicine only within the confines of the hospital specified in his permit and the permit would in no case be in excess of one year, renewable at the discretion of the board of medical examiners

New Jersey

Bill Introduced.—S. 49, to amend the law relating to the **practice of chiropody,** redefines chiropody as follows: "the diagnosis of or the holding out of a right or ability to diagnose any ailment of the human foot, or the treatment thereof or the holding out of a right or ability to treat the same by any one or more of the following means: local medical, mechanical, minor surgical, manipulative and physiotherapeutic or the application of external medical or any other of the aforementioned means except minor surgical and local medical to the lower leg and ankle for the treatment of a foot ailment. not including, however, the treatment of tuberculosis, osteomyelitis, malignancies, syphilis, diabetes, tendon transplantations, bone resections, amputations, fractures, dislocations, the treatment of varicose veins by surgery or injection, the administration of anesthetics other than local, the use of radium, the use of x-rays except for diagnosis, or the treatment of congenital deformities by the use of a cutting instrument or electrosurgery. The term 'local medical' hereinbefore mentioned shall be construed to mean the prescription or use of a therapeutic agent or remedy where the action or reaction is intended for a localized area or part."

Bills Passed.—S. 66, which passed the house April 1, proposes to appoint the state department of institutions and agencies as the agency to receive federal funds to assist in a state **survey of hospitals** and the development of a state program for the construction of additional needed hospital facilities S 208, which passed the senate March 24, proposes to authorize the state department of health to purchase and distribute free, in accordance with rules of said department, **antibiotics** for use in preventing or treating communicable diseases.

New York

Bills Enacted.—S. 216, which has become chapter 523 of the Laws of 1947, amends the civil practice act by allowing admission in evidence of a **hospital bill bearing a certification** by the superintendent or other head of the hospital that the bill is correct, that each of the items shown was necessarily furnished and that the charge is fair and reasonable. A bill so admitted is prima facie evidence of the facts stated, subject to rebuttal by any party affected thereby. S. 1904, which has become chapter 408 of the Laws of 1947, requires any institution desiring to conduct scientific tests and **experiments on living animals** to be approved for that purpose by the state commissioner of health under such rules as the commissioner shall determine.

North Carolina

Bills Passed.—H. 623, which passed the house April 1, proposes to require laboratories making **serologic tests** to be certified by the North Carolina state board of health. H 744, which passed the senate April 2, proposes the enactment of a hospital licensing law and the appointment of a **state advisory council.**

Ohio

Bill Passed.—H. 294, which passed the house April 2, proposes to amend the law relating to the **practice of chiropody** by authorizing the state board of medical examiners to adopt rules and regulations permitting in the practice of chiropody the use of such drugs as are necessary to such practice.

Oklahoma

Bill Introduced.—H. 339 proposes the creation of a **commission on postmortem examinations.** Among other things the commission would appoint a chief medical examiner who shall be a pathologist, trained in legal medicine and licensed or eligible for licensure in Oklahoma as a doctor of medicine by the board of medical examiners and shall maintain a laboratory for the conduct of pathologic, bacteriologic and toxicologic investigations. The proposal would authorize the county medical examiner or the chief medical examiner to perform an autopsy whenever in his opinion it was advisable and in the best public interest. He may also cause an autopsy to be made on any person when death was caused from violence, or suddenly when in apparent good health, or when unattended by a physician, or in any suspicious or unnatural manner, or as the result of abortion or suspected abortion.

Oregon

Bill Passed.—S. 77, which passed the house March 29, proposes the repeal of existing laws requiring the licensing of **maternity hospitals** and certain other types of institutions and sanatoriums and the enactment of a new law requiring the licensing, inspecting and regulating of all hospitals and related institutions within the state.

Pennsylvania

Bills Introduced.—H. 667 proposes that all prescriptions for **narcotic drugs** shall be written upon printed forms prepared and issued by the department of health and that any person using such forms shall be able to account for every one of the forms issued to him at all times. S. 384 proposes that whoever experiments or directs, aids or assists in **experiments on a living dog** in any manner for the purpose of creating or inducing in or on the body of a living dog any disease, malady, disorder or any benign or malignant growth or who performs, directs, aids or assists in the performance of any operation on a living dog for any purpose other than the healing or curing of such dog of physical ailments or for the purpose of abating power of procreation is guilty of a misdemeanor and subject to various stated fines and imprisonment or both. S. 395 proposes to require any institution requiring for the effective carrying on of its scientific or educational activities **the use of live dogs and cats** to apply to the department of health for a license to obtain such dogs and cats from pounds in the jurisdiction. Such license would have to be renewed annually Nothing in the proposal, however, is to be construed as affecting the right of an institution to obtain dogs and cats from sources other than public pounds.

South Carolina

Bills Passed.—H. 353, which passed the house March 17, proposes an enabling act for the organization and operation of **nonprofit corporations** for the purpose of furnishing medical service at agreed rates through participating physicians. S. 254, which passed the senate March 25, proposes to authorize **osteopathic physicians** licensed in the state to certify birth and death certificates in the same manner as is now prescribed by law for other physicians.

South Dakota

Bill Enacted.—H. 18, which was approved March 10, requires the licensing of **chiropractic hospitals,** sanatoriums or related institutions by the board of chiropractic examiners.

Texas

Bill Passed.—H. 40, which passed the house April 1, proposes the creation of a Texas **Board of Chiropractic Examiners** and defines chiropractic to be "the employment of objective or subjective means, without use of drugs or surgery, for the purpose of ascertaining the alignment of the vertebrae of the human spine, and the practice of adjusting the vertebrae by hand to correct any subluxation or misalignment thereof."

Utah

Bills Enacted.—S 104, which was approved March 20, 1947, requires the licensing, inspecting and regulating of hospitals and the appointment of **a hospital advisory council.** S 151, which was approved March 20, is **a state hospital survey and construction act** which requires a survey of all hospital and public health center facilities in the state and the preparation of a program for the construction of additional needed facilities. The law requires the governor to appoint an advisory hospital council and authorizes the commissioner of the state department of health to apply for federal funds for assistance in either the survey or the construction program

Vermont

Bills Introduced.—H. 267 proposes the enactment of a **licensing law for hospitals,** sanatoriums, rest homes, nursing homes and related institutions. H. 317 proposes **a licensing law for hospitals,** sanatoriums, rest homes, nursing homes, homes for the reception of children and related institutions

Bills Passed.—S. 38, which passed the senate March 22, to amend the law relating to the **practice of osteopathy,** proposes to designate such practitioners as osteopathic physicians and surgeons, rather than practitioners of osteopathy, and to authorize such practitioners to issue certificates relative to the commitment of insane persons, and such reports and certificates should be accepted equally with the reports and certificates of physicians of other schools of medicine. The proposal would, in effect, authorize such physicians to have the same rights with respect to the rendering of medical service under the provisions of public health, welfare and assistance laws and regulations now or hereafter in force as are possessed by the regularly licensed physicians and surgeons in the state. The proposal would also require osteopaths to have preliminary training including one year of internship in a hospital approved by the board. S. 45,, which passed the senate March 28, proposes the enactment of a **hospital survey and construction act** requiring a survey of existing hospital facilities and the preparation of a program for the construction of additional needed facilities. The proposal also requires the appointment of an advisory hospital council and the acceptance of federal funds for assistance in state survey and construction activities.

Bill Enacted.—H. 164, which was approved April 1, provides an appropriation of $9,000 for the continued maintenance of the Vermont **Blood Plasma Bank.**

Wisconsin

Bills Introduced.—A. 319 proposes to prohibit the **sale of any dangerous drug** except on the prescription of a physician, dentist, chiropodist or veterinarian. The proposal defines dangerous drug to include any hypnotic drug (including acetylurea derivatives, barbituric acid or malonylurea derivatives, chloral, paraldehyde, phenylhydantoin derivatives, sulfonmethane derivatives, or any compounds or mixtures or preparations thereof that may be used for producing hypnotic effects); aminopyrine, amphetamine, desoxyephedrine, cinchophen, neocinchophen, diethylstilbestrol, ergot, cotton root, oils of croton, rue, savin or tansy, sulfanilamide or substituted sulfanilamides, thyroid, or compounds or mixtures of any such drugs. A. 382, to amend the law relating to **nonprofit sickness and care plans of medical societies,** proposes that no doctor licensed to practice under the state medical practice act shall be denied the right to participate in any other voluntary prepayment surgical, medical or sickness care plan that may be established by cooperatives or labor unions or other organized groups, or by any medical society having the powers and privileges conferred by this section and nothing contained in this section shall be construed to preclude the formation and establishment of such other plans by any one or more of said groups A. 421, to amend the law relating to **chiropractic,** proposes to require chiropractic applicants to have graduated from a school of chiropractic approved and recognized by the board of examiners. S. 421 proposes the creation of a state board of examiners in naturopathy and **defines naturopathy** as "the prevention, diagnosis and treatment of human injuries, ailments and diseases by means of any one or more of the material methods or agencies of healing as taught by approved schools of naturopathy, said methods or agencies including dietetics, phytotherapy, vitamin or mineral or glandular food supplementations, irrigations, inhalations, external applications, physiotherapy and electrotherapy. The practice of naturopathy shall exclude the practice of medicine, surgery, obstetrics, osteopathy, chiropractic and the use of drugs. The practice of naturopathy shall exclude the treatment of cancer, tuberculosis, gonorrhea, syphilis, diphtheria, scarlet fever, typhoid fever, smallpox and fractures."

Miscellaneous

THE WORLD HEALTH ORGANIZATION

President Truman has sent to the Congress a suggested joint resolution providing for membership by the United States and participation in the World Health Organization. The President has said he is sure it will make a substantial contribution to world health conditions through the years; he considers it important that the United States join the World Health Organization as soon as possible. The resolution provides that the President is to designate from time to time to attend a specified session or sessions of the World Health Assembly not to exceed three delegates of the United States and such alternates as may be consistent with the rules of procedure of the World Health Assembly. One delegate is to be designated the chief delegate. Whenever the United States becomes entitled to designate a person to serve on the executive board of the World Health Organization, the President is to designate such a person; the one designated will be entitled to receive compensation at a rate not to exceed $12,000 per year for such period as the President may specify. Any officer of the United States is not entitled to receive compensation. The resolution also provides that the United States shall appropriate annually to the Department of State such sums as may be necessary to meet a share of the expenses of the organization and the expenses of the staff.

With the message from the President came a memorandum from the Department of State calling attention to the fact that the United States Senate expressed itself in favor of the early formation of such an organization on Dec. 20, 1945. Since that time an international health conference has been held, a constitution for a World Health Organization has been signed by sixty-one states and an Interim Commission has been established. The General Assembly of the United Nations adopted a resolution on Dec. 14, 1946 recommending that all members of the United Nations accept the constitution of the World Health Organization. The Department of State feels that such an international organization in the field of health is essential to attack diseases at their source, to prevent their spread and to raise the health level of peoples everywhere. The State Department points out that one of the purposes of the new organization is "the attainment by all people of the highest possible level of health."

The World Health Organization may assist states at their request in strengthening their national health services. This does not mean, however, that the organization will have in any way authority to interfere in the administration of health or medical care in any state. The chief functions of the organization will no doubt include the collection and improvement of worldwide disease statistics, the distribution of knowledge regarding health and medicine, the promotion of research and the continuation and further development of the highly important work done by the League of Nations in the standardization of drugs and biologic preparations. The constitution permits any government to reject any regulations that it finds unacceptable.

The structure of the World Health Organization provides for a health assembly and an executive board composed of eighteen persons designated by eighteen governments. The officials will include a director general and a secretariat. The constitution of the World Health Organization will come into force and the organization will be established when twenty-six members of the United Nations have notified the secretary general of the United Nations of their acceptance of the constitution. Thus far six members, including China, Canada, Iran, New Zealand, Syria and the United Kingdom, have taken the necessary action.

Medical Economics

MEDICAL GROUPS IN THE UNITED STATES, 1946

FRANK G. DICKINSON, Ph.D.
Director, Bureau of Medical Economic Research
Chicago

The percentage of practicing physicians engaged in group practice in the United States in 1946 was approximately the same, 2 per cent, as in 1940. This conclusion is based on a comparison of studies made in 1940 by the American Medical Association and in 1946 by the U. S. Public Health Service. Under the direction of Dr. G. Halsey Hunt, Senior Surgeon, the U. S. Public Health Service is conducting a study of group practice a preliminary report of which will be published in the *New England Journal of Medicine* (in press). Just released in connection with the major report is a list of the groups which replied to a questionnaire sent out last summer. This list, "Medical Groups in the United States, 1946" (61 pages, mimeographed), was used in a comparison with the 1940 publication "Group Medical Practice," prepared by Dr. Roscoe G. Leland of the Bureau of Medical Economics. We have made a state by state comparison with respect to the number of groups and the number of physicians in groups; the number of groups in each state was expressed as a percentage of the number of groups in the nation; the number of groups in existence in 1940 which are not now in existence was tabulated; the percentage distribution of physicians in active practice in 1946 (whether in group or other types of practice) was estimated. Our analysis indicates that approximately 2 per cent of the practicing physicians are and were full time physicians on the staffs of groups as shown in the 1940 (2,093) and 1946 (3,275) studies.

The table shown herewith summarizes the comparisons by nine groups of states. The data by states (not shown) indicate that group practice is relatively prominent in Minnesota, California and Montana; contrariwise, it is not very prevalent in New York, New Jersey and Pennsylvania. New York has only one fortieth of the groups in the entire nation but approximately one sixth of all practicing physicians in the nation. Dr. Hunt lists no groups in Maine, Connecticut and Rhode Island. The items for the states are reflected in the totals for the groups of states shown in the table.

Dr. Hunt's list of 407 comprises groups classified as private, industrial, consumer, hospital, medical school or government. The following directory information is given: name, street address, medical director, business manager, primary activity, fields covered and number of physicians, nurses and dentists. The author warns the reader that there are doubtless some omissions from this list because most but not all of the known groups replied to the author's questionnaire. Except for the omission of the Lahey Clinic of Boston, it appears to me that this list is quite comprehensive.

The length of this list is due to the intention of the author to include all doubtful cases. "The only qualifications required of a group for inclusion here are, first, that it have some sort of formal organization and, second, that it have at least three full time physician members." The definition of group practice as developed by the Bureau of Medical Economics in its 1940 report would not include all these 407 groups. The Bureau's definition specified that:

1. There must be at least three physician members.
2. The receipts from medical practice must have been pooled in some manner and then redistributed to the members according to some previously arranged plan.
3. "Closed staff" hospitals were not included unless the members of the staff pooled the income received for services outside the hospital.
4. Purely "diagnostic groups" which receive only referred cases were excluded.
5. "Industrial" groups which furnish medical services to a single industry and thus to only a limited group of the general population were omitted.

Until our Bureau of Medical Economic Research completes its revision of the 1940 study by Dr. Leland we cannot estimate the number of existing groups which comply with the Bureau's 1940 definition. The 1940 report of the Bureau listed 339 groups; only 219 of these appear in Dr. Hunt's list. Apparently 120 groups were dissolved during the six years. Similarly a comparison between our Bureau's 1932 and 1940 lists showed that 63 of the 239 groups on the 1932 list had been discontinued during that eight year interval. This is evidence that the mortality rate of medical groups is significant and should be considered carefully in any study of group practice or in comparing the increase or decrease in the number of groups from time to time. It is important to know what groups organize and fail in a short time and what groups maintain themselves and their organization over a significant number of years. An additional factor of group practice which should be considered is the partnership aspect, which often necessitates complete reorganization of a group in the event of death or withdrawal of one of the partners.

The U. S. Public Health Service has made a good beginning in its study of group medical practice, and the preliminary list of 407 groups should serve as a useful directory.

Medical Groups in Geographic Divisions of the United States 1940 (A. M. A.) and 1946 (U. S. P. H. S.) Surveys

Number and Percentage of Groups, Number and Percentage of Physicians, Number of Groups on 1940 List but Not on 1946 List, and Percentage of Physicians in Active Practice in 1946; by Geographic Divisions

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	Number of Groups		Percentage Distribution of Groups		Number of Physicians in Groups		Percentage Distribution of Physicians in Groups		Number of 1940 Groups Not on 1946 List	Percentage Distribution of Physicians in Active Practice in 1946
Geographic Division	1940	1946	1940	1946	1940	1946	1940	1946		
New England	6	8	2	2	67	61	3	2	1	7
Middle Atlantic	7	17	2	4	47	131	2	3	1	27
East North Central	76	83	22	21	463	597	22	18	28	21
West North Central	88	93	26	23	519	819	25	25	24	9
South Atlantic	19	26	6	6	102	204	5	6	11	11
East South Central	13	22	4	5	66	180	3	6	4	5
West South Central	62	65	18	16	356	491	17	15	28	8
Mountain	27	43	8	11	151	286	7	9	9	3
Pacific	41	50	12	12	322	506	16	16	14	9
Total	339	407	100	100	2,093	3,275	100	100	120	100

New England (Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut).
Middle Atlantic (New York, New Jersey, Pennsylvania).
East North Central (Ohio, Indiana, Illinois, Michigan, Wisconsin).
West North Central (Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, Kansas).
South Atlantic (Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida).
East South Central (Kentucky, Tennessee, Alabama, Mississippi).
West South Central (Arkansas, Louisiana, Oklahoma, Texas).
Mountain (Montana, Idaho, Wyoming, Colorado, New Mexico, Utah, Nevada, Arizona).
Pacific (Washington, Oregon, California).

Coming Medical Meetings

American Medical Association, Atlantic City, June 9-13. Dr. George F. Lull, 535 N. Dearborn St., Chicago 10, Secretary.

Aero Medical Association of the United States, Atlantic City, June 4-6. Dr. David S. Brachman, 1016 Dime Bldg., Detroit 26, Secretary.

American Association for Thoracic Surgery, St. Louis, May 28-30. Dr. Richard H. Meade Jr., 55 E. Washington St., Chicago 2, Secretary.

American Association of Genito-Urinary Surgeons, Absecon, N. J., June 4-6. Dr. Charles C. Higgins, 2020 E. 93d St., Cleveland 6, Secretary.

American Association of Industrial Physicians and Surgeons, Buffalo, N. Y., Statler Hotel, April 26-May 4. Dr. Frederick W. Slobe, 28 E. Jackson Blvd., Chicago 4, Secretary.

American Association of Pathologists and Bacteriologists, Chicago, May 16-17. Dr. Howard T. Karsner, 2085 Adelbert Road, Cleveland 6, Secretary.

American Association of Plastic Surgeons, Nashville, Tenn., May 5-6 and Memphis, Tenn., May 7-8. Dr. Frederick A. Figi, 102 Second Ave. S.W., Rochester, Minn., Secretary.

American Association of the History of Medicine, Cleveland, May 25-26. Dr. Howard Dittrick, 2020 E. 93d St., Cleveland 6, Secretary.

American Association on Mental Deficiency, St. Paul, Minn., May 28-31. Dr. Neil A. Dayton, Box 51, Mansfield Depot, Conn., Secretary.

American College of Allergists, Atlantic City, Hotel Senator, June 6-8. Dr. Fred W. Wittich, 401 LaSalle Medical Bldg., Minneapolis 2, Secretary.

American College of Chest Physicians, Atlantic City, June 5-8. Mr. Murray Kornfeld, 500 N. Dearborn St., Chicago 10, Executive Secretary.

American College of Physicians, Chicago, April 28-May 2. Mr. E. R. Loveland, 4200 Pine St., Philadelphia 4, Secretary.

American College of Radiology, Atlantic City, June 6-7. Mr. Mac F. Cahal, 20 N. Wacker Drive, Chicago 6, Executive Secretary.

American Dermatological Association, Murray Bay, Quebec, Can., June 1-5. Dr. Harry R. Foerster, 208 E. Wisconsin Ave., Milwaukee, Wis., Secretary.

American Geriatrics Society, Atlantic City, Hotel Brighton, June 5-7. Dr. Malford W. Thewlis, 25 Mechanic St., Wakefield, R. I., Secretary.

American Heart Association, Atlantic City, Hotel President, June 6-7. Dr. Howard B. Sprague, 50 W. 50th St., New York, Secretary.

American Laryngological Association, St. Louis, April 23-24. Dr. Arthur W. Proetz, 12 Westmoreland Place, St. Louis 8, Secretary.

American Laryngological, Rhinological and Otological Society, St. Louis, April 25-26. Dr. C. Stewart Nash, 288 Alexander St., Rochester 7, N. Y., Secretary.

American Medical Women's Association, Atlantic City, June 7-8. Dr. Helen F. Schrack, 216 N. Fifth St., Camden, N. J., Secretary.

American Neisserian Medical Society, Atlantic City, Marlborough-Blenheim Hotel, June 8. Dr. William L. Fleming, 750 Harrison Ave., Boston, Secretary.

American Ophthalmological Society, Hot Springs, Va., June 5-7. Dr. Walter S. Atkinson, 129 Clinton St., Watertown, N. Y., Secretary.

American Otological Society, St. Louis, April 21-22. Dr. Gordon D. Hoople, 713 E. Genesee St., Syracuse 2, N. Y., Secretary.

American Pediatric Society, Stockbridge, Mass., May 13-15. Dr. Henry G. Poncher, 1819 W. Polk St., Chicago 12, Secretary.

American Physiological Society, Chicago, May 18-22. Dr. Maurice Visscher, University of Minnesota, Minneapolis, Secretary.

American Proctologic Society, Atlantic City, June 7-8. Dr. Harry E. Bacon, 2031 Locust St., Philadelphia 3, Secretary.

American Psychiatric Association, New York, Hotel Pennsylvania, May 19-23. Dr. Leo H. Bartemeier, General Motors Bldg., Detroit, Secretary.

American Radium Society, Atlantic City, June 8. Dr. Hugh F. Hare, 605 Commonwealth Ave., Boston 15, Secretary.

American Society for Clinical Investigation, Atlantic City, Chalfonte-Haddon Hall, May 5. Dr. Eugene A. Stead Jr., Grady Hospital, Atlanta 3, Georgia, Secretary.

American Society for Experimental Pathology, Chicago, May 19-23. Dr. Frieda S. Robscheit-Robbins, 260 Crittenden Blvd., Rochester, N. Y., Secretary.

American Society for Pharmacology and Experimental Therapeutics, Chicago, May 18-22. Dr. Harvey B. Haag, Medical College of Virginia, Richmond 19, Va., Secretary.

American Society for Research in Psychosomatic Problems, Atlantic City, May 3-4. Dr. Edwin G. Zabriskie, 714 Madison Ave., New York 21, Secretary.

American Society for the Study of Sterility, Atlantic City, Hotel Shand, June 7-8. Dr. John O. Haman, 490 Post St., San Francisco 2, Secretary.

American Society of Biological Chemists, Chicago, May 18-22. Dr. Otto A. Bessey, Public Health Research Institute, New York 9, Secretary.

American Society of Clinical Pathologists, Atlantic City, June 4-8. Dr. Alfred S. Giordano, 531 N. Main St., South Bend, Ind., Secretary.

American Therapeutic Society, Atlantic City, Chalfonte Hotel, June 6-7. Dr. Oscar B. Hunter, 1835 I St., N. W., Washington 6, D. C., Secretary.

Arizona State Medical Association, Tucson, May 7-10. Dr. Frank J. Milloy, 112 N. Central Ave., Phoenix, Secretary.

Association for the Study of Internal Secretions, Atlantic City, June 6-7. Dr. Henry H. Turner, 1200 N. Walker St., Oklahoma City 3, Secretary.

Association of American Physicians, Atlantic City, May 6-7. Dr. Joseph T. Wearn, Lakeside Hospital, Cleveland 6, Secretary.

California Medical Association, Los Angeles, Hotel Biltmore, April 30-May 3. Dr. L. Henry Garland, 450 Sutter St., San Francisco 8, Secretary.

Connecticut State Medical Society, New Haven, April 28-30. Dr. Creighton Barker, 258 Church St., New Haven 10, Secretary.

Federation of American Societies for Experimental Biology, Chicago, May 18-22. Dr. William H. Chambers, 1300 York Ave., New York 21, Secretary.

Florida Medical Association, Miami, April 20-23. Dr. Robert B. McIver, P. O. Box 1018, Jacksonville, Secretary.

Georgia, Medical Association of, Augusta, Bon Air Hotel, April 22-25. Dr. Edgar D. Shanks, 478 Peachtree St. N. E., Atlanta, Secretary.

Hawaii Territorial Medical Association, Lihue, Kauai, May 1-4. Dr. Harry L. Arnold Jr., 510 S. Beretania St., Honolulu 53, Secretary.

Illinois State Medical Society, Chicago, Palmer House, May 12-14. Dr. Harold M. Camp, 224 S. Main St., Monmouth, Secretary.

Kansas Medical Society, Topeka, May 12-15. Dr. John M. Porter, 512 New England Bldg., Topeka, Secretary.

Louisiana-Mississippi Ophthalmological and Otolaryngological Society, Biloxi, Miss., Buena Vista Hotel, May 5. Dr. Edley H. Jones, 1301 Washington St., Vicksburg, Miss., Secretary.

Louisiana State Medical Society, New Orleans, May 12-14. Dr. P. T. Talbot, 1430 Tulane Ave., New Orleans 13, Secretary.

Maryland, Medical and Chirurgical Faculty of, Baltimore, April 22-23. Dr. W. Houston Toulson, 1211 Cathedral St., Baltimore 29, Secretary.

Massachusetts Medical Society, Boston, Hotel Statler, May 20-22. Mr. Robert St. B. Boyd, 8 Fenway, Boston 15, Executive Secretary.

Medical Library Association, Cleveland, Wade Park Manor, May 27-29. Miss Heath Babcock, New York State Medical Library, Albany 1, New York, Secretary.

Mississippi State Medical Association, Biloxi, May 6-8. Dr. T. M. Dye, Box 295, Clarksdale, Secretary.

National Gastroenterological Association, Atlantic City, June 4-6. Dr. G. Randolph Manning, Room 319, 1819 Broadway, New York, Secretary.

Nebraska State Medical Association, Omaha, April 28-May 1. Dr. R. B. Adams, 416 Federal Securities Bldg., Lincoln 8, Secretary.

New Jersey, Medical Society of, Atlantic City, Haddon Hall, April 22-24. Dr. Alfred Stahl, 160 Lincoln Ave., Newark 4, Secretary.

New Mexico Medical Society, Albuquerque, April 30-May 3. Dr. H. L. January, 221 West Central Ave., Albuquerque, Secretary.

New York, Medical Society of the State of, Buffalo, May 5-9. Dr. Walter P. Anderton, 292 Madison Avenue, New York 19, Secretary.

North Carolina, Medical Society of the State of, Virginia Beach, Va., Cavalier Hotel, May 12-14. Dr. Roscoe D. McMillan, P. O. Box 232, Red Springs, Secretary.

North Dakota State Medical Association, Fargo, May 25-27. Dr. L. W. Larson, 221 Fifth St., Bismarck, Secretary.

Ohio State Medical Association, Cleveland, May 6-8. Mr. Charles S. Nelson, 79 E. State St., Columbus 15, Executive Secretary.

Oklahoma State Medical Association, Tulsa, Mayo Hotel, May 14-16. Mr. R. H. Graham, 210 Plaza Court Bldg., Oklahoma City, Executive Secretary.

Rhode Island Medical Society, Providence, May 14-15. Dr. Morgan Cutts, 106 Francis St., Providence 3, Secretary.

Society of American Bacteriologists, Philadelphia, May 13-16. Dr. Leland W. Parr, 1335 H St. N. W., Washington 5, D. C., Secretary.

South Dakota State Medical Association, Rapid City, May 31-June 3. Dr. Roland G. Mayer, 22½ S. Main St., Aberdeen, Secretary.

Texas, State Medical Association of, Dallas, Adolphus Hotel, May 5-8. Dr. Holman Taylor, 1404 W. El Paso St., Fort Worth 3, Secretary.

United States-Mexico Border Public Health Association, San Diego, California, and Tijuana, Mexico, May 6-8. Dr. James A. Grider Jr., 151 U. S. Court House, El Paso, Texas, Secretary.

West Virginia Medical Association, Charleston, May 12-14. Mr. Charles Lively, 1031 Quarrier St., Charleston 24, Secretary.

GOVERNMENT SERVICES

ARMY

ARMY AWARDS AND COMMENDATIONS

Colonel Edmund Horgan

The Legion of Merit has been awarded to Col. Edmund Horgan, M. C., A. U. S., of Delaplane, Va., who performed exceptionally meritorious services at Foster General Hospital and later at Brooke General Hospital from January 1943 to March 1946. As noted in the citation, in his capacity as chief of the surgical service he was responsible for the organization and the close supervision of all personnel concerned with surgery at these two hospitals. The prompt and efficient handling of serious medical and surgical cases under his care insured completeness of treatment and the attainment of maximum benefits. His stimulation of higher attainment of younger surgeons and his thoroughness of technical training have reflected great credit on him and on the Medical Department. Dr. Horgan graduated from George Washington University School of Medicine in 1908 and entered the military service March 2, 1943.

Colonel Robert H. Lowry

The Legion of Merit has been awarded to Col. Robert H. Lowry, M. C., U. S. Army, of Washington, D. C., who served with distinction as commanding officer, general dispensary, and as surgeon, Military District of Washington, from February 1943 to August 1946. The superior health record established for the military district was credited by the citation for his successful solution of many problems incident to continued changes in medical personnel, supply and administration. Through his energetic efforts, superior leadership and outstanding professional skill, Colonel Lowry was primarily responsible for the high standards of operating efficiency achieved and maintained in the dispensary throughout an extended and crucial period. Dr. Lowry graduated from Rush Medical College in 1914 and entered the military service July 6, 1917.

Colonel Earl R. Denny

The Legion of Merit was recently awarded to Col. Earl R. Denny, M. C., A. U. S., of Tulsa, Okla., who, according to the citation, rendered exceptionally outstanding and meritorious service as chief of the medical service at Gardiner General Hospital, Chicago, from October 1943 to February 1946. His energetic and untiring efforts in the care and treatment of his patients, combined with his studies in the use of penicillin, resulted in the recovery of many extremely critical cases. His work in this field was a most laudable contribution to the efforts of the Medical Corps. Dr. Denny, who has also been awarded the Army Commendation Ribbon, graduated from Indiana University School of Medicine in 1925 and entered the service on May 7, 1942.

Colonel Howard E. Boucher

The Legion of Merit was recently awarded to Col. Howard E. Boucher, M. C., A. U. S., of Columbus, Ohio, for meritorious service during the period September 1940-January 1946 in a position requiring exceptional skill and ability at state headquarters, Selective Service System, Columbus, Ohio. Dr. Boucher graduated from Ohio State University College of Medicine in 1910 and entered the service Oct. 18, 1940.

Colonel Paul I. Robinson

The Oak Leaf Cluster to the Legion of Merit was recently awarded to Col. Paul I. Robinson, M. C., A. U. S. The citation read as follows: "Colonel Paul I. Robinson, successively as chief of various divisions of the Supply Service, Surgeon General's Office, was directly responsible for the evolution of a superior state of preparedness in Medical Department material lanning, from December 1941 to January 1945. His foresight and the quality of his efforts resulted in plans developed in such practical detail that they were placed in operation without deviation and proved to be complete and adequate for highly successful application." Dr. Robinson graduated from Washington University School of Medicine in 1928 and entered the service Aug. 1, 1929.

Lieutenant Colonel Robert C. Gaskill

The Legion of Merit has been awarded to Lieut. Col. Robert C. Gaskill, M. C., U. S. Army. The citation stated that he performed exceptionally meritorious service from December 1941 to April 1942 on Luzon, Philippine Islands. With limited supplies, personnel and equipment, he supervised the administration of medical care so that despite the tropical climate, malnutrition and conditions of combat the medical service successfully maintained a high combat effectiveness among the troops. Dr. Gaskill graduated from the University of Texas Medical School in 1929 and entered the military service July 1, 1929.

Lieutenant Colonel Joseph E. Smadel

The United States of America Typhus Commission Medal has been awarded to Lieut. Col. Joseph E. Smadel, M. C., A. U. S., of Washington, D. C. The citation recalls that he rendered exceptionally meritorious service in the investigation of typhus fever during the period June 1943 to March 1945. First as chief of the virus division, First Medical General Laboratory, in the European Theater of Operations, and later as chief of the division of virus and rickettsial diseases at the Army Medical School, Washington, D. C., he provided special laboratory and biologic supply services which were essential to the work of the United States of America Typhus Commission and to other organizations of the Army. By his original investigations he advanced the knowledge of rickettsial infections, carried on new studies of the chemotherapy of typhus and developed a type of vaccine against scrub typhus. He contributed to practical typhus control and to the advancement of medical science. Dr. Smadel graduated from Washington University School of Medicine in St. Louis and entered the military service Aug. 17, 1942.

Lieutenant Colonel Brittain F. Payne

The Army Commendation Ribbon was recently awarded to Lieut. Col. Brittain Ford Payne, M. C., A. U. S., of New York, for the part he played "in making the course in ophthalmology at the AAF School of Aviation Medicine outstanding in every respect." Said the citation addressed to Lieutenant Colonel Payne "Your lectures were incomparably thorough and concise. The meticulous care displayed by you in the preparation of ophthalmological training aids made this complex highly technical specialty more easily and thoroughly understood by your students. You have displayed unusual devotion to duty, initiative and loyalty to your assignment." Dr. Payne graduated from the University of Texas Medical Branch, Galveston, and entered the service Nov. 22, 1942.

Captain Branch Craige Jr.

The Army Commendation Ribbon has been awarded to Capt. Branch Craige Jr., M. C., A. U. S., of El Paso, Texas, whose service with the Medical Department was stated in the citation to have been exceptional when compared with others of the same grade or similar position. Captain Craige was commended for his outstanding contribution as officer in charge of the Clinical Research Unit, organized during the Malarial Research work at Stateville Penitentiary, Joliet, Ill., through the joint effort of the University of Chicago and the Office of Scientific Research and Development for March 1945 to March 1946. Dr. Craige graduated from Harvard Medical School in 1939 and entered the military service in July 1943.

NAVY

ACTIVE DUTY FOR RESERVE OFFICERS

Naval Air Reserve Training Command, Naval Air Station, Glenview, Ill., announces that opportunities for medical reserve officers to return to active duty at one of many air stations in this command are available. As of February 25 a billet was available at Glenview for a commander flight surgeon. Government quarters are available at several of the stations. Flight surgeons receive duty involving flying which entitles them to flight pay. Individuals may terminate their active duty at any time. Reserve medical officers and pharmacists interested should write to the Bureau of Naval Personnel via the Chief of Naval Air Reserve Training, Naval Air Station, Glenview, Ill. Personnel are desired in ranks not above that of commander in the medical corps; however, captains may apply for duty in their rank requesting waiver.

MEDICAL ASPECTS OF ATOMIC WARFARE

At a meeting of medical officers, Naval Medical Center, Bethesda, Md., March 27, the subject of discussion was the medical aspects of atomic warfare, and the speakers were Dr. Shields Warren, professor of pathology, Harvard Medical School, Boston, and Capt. R. Harold Draeger (MC), U.S.N.R. Dr. Warren, formerly captain in the Naval Medical Reserve Corps, was executive officer of the Naval Medical Reserve section at the Bikini tests and Captain Draeger was officer in charge of the section directing all animal and biologic observations at Operation Crossroads. Army, Public Health, Veterans Administration and civilian doctors of the District of Columbia and Montgomery County were invited. Refreshments were served at the conclusion of the program, which was the seventh of a series sponsored by the Naval Medical School.

NAVY AWARDS AND COMMENDATIONS

Captain Ralph E. Fielding

The Bronze Star Medal and a Gold Star in lieu of a second Bronze Star were recently awarded to Comdr. (now Capt.) Ralph E. Fielding (MC), U.S.N. The citations read in part as follows: For meritorious service as medical officer on the staff of the Commander Third Amphibious Force from July 15, 1943 to March 31, 1944, when the force carried out amphibious operations for the successful seizure of Vella La Vella, Treasury, Cape Torokina on Bougainville, Green and Emirau Islands. Throughout these engagements he displayed exceptional skill in preparing and directing effective measures for the care of the wounded. His direction of the prompt evacuation and immediate administration of surgical treatment resulted in the saving of many lives.

For distinguishing himself by meritorious service as medical officer on the staff of an amphibious task force from April 1, 1944 to April 17, 1945, when amphibious operations were carried out which resulted in the seizure of islands of the Palau Group, and in the execution of the initial landings on Leyte and Luzon Islands, Philippine Islands. Plans for the evacuation and treatment of the wounded in these three operations were prepared by Commander Fielding; he participated in the operations against the enemy on Leyte and Luzon islands, during which, although subjected to numerous enemy air attacks and to threats of attack by the Japanese fleet, he capably directed the prompt evacuation and hospitalization of casualties. Throughout these periods his initiative, devotion to duty and thorough knowledge of military medicine were largely instrumental in the alleviation of much suffering and were in keeping with the best traditions of the naval service. Dr. Fielding graduated from Harvard Medical School in 1928 and began his service in the U. S. Navy July 5, 1928.

Commander Paul Harry Morton

The Air Medal has been awarded to Comdr. Paul Harry Morton (MC), U.S.N., for meritorious achievement as senior flight surgeon in Headquarters Squadron, Fleet Air Wing Seven, during operations against the enemy in the Bay of Biscay and the English Channel from Oct. 1, 1944 to May 1, 1945. The citation related that Commander (then Lieutenant Commander) Morton, participating in numerous operational flights during this period, contributed to the success of his air wing in providing protection for the supply lines in the English Channel during the advance of Allied armies through occupied France. He aided in the improvement of the physical and mental standards of United States naval aviators and plane crews. His tireless devotion to duty was in keeping with the highest traditions of the United States Naval Service. Dr. Morton graduated from Jefferson Medical College of Philadelphia in 1938 and entered the military service July 19, 1938.

MISCELLANEOUS

SALE OF SURPLUS MEDICAL SUPPLIES

From the various regional and subregional offices of the War Assets Administration notices have been received of the following sales of government surplus medical supplies in the purchase of which physicians who are veterans have certain priorities:

Columbus, Ohio, Subregional Office, 4300 East Fifth Avenue, bids open April 24. Among the equipment on sale are instruments, dressings and water sterilizers.

New York Regional Office, 37 Broadway, New York; bids received until April 23. Sale of bandages, case fitting, eyeglass, gas mask; first aid packets; rubber catheters; kit: water testing screening for chemical warfare agents; molybdenum, bone plates; surgical face masks, retractors and bone screws. Some of this property is at the Medical Supply Depot, Binghamton, N. Y., or New York Port of Embarkation, Brooklyn, Port Johnston, Bayonne, N. J., and Warehouse X-066, Corona, Long Island.

San Francisco District Disposal Office, 33 Berry Street, San Francisco 7, bids open on May 1. Large quantities of atabrine ampules and tablets for sale, some at the Stockton General Depot, Stockton, Calif., some at the Naval Medical Supply Depot, Oakland, and some at the San Francisco Medical Depot, 1855 Folsom Street, San Francisco.

Kansas City Regional Office, 95th and Troost, Kansas City, Mo.; sale closes April 21. Among items for sale are stretchers, litters, anatomical charts, portable emergency operating lamps, thermometers, sulfapyridine tablets, patients' chairs with head rest, hospital and utensil sterilizers (used), surgical instruments (used).

Birmingham Regional Office, 1955 North Fiftieth Street, Birmingham, Ala.; sale now is on a first come first serve basis. Among items for sale are dissecting scissors, bone chisels, bone clamps, curets, surgical knives, retractors, trephine sets, bone drills, dilators, bone forceps, sterilizers, distilling apparatus, surgical needles, food carts, operating lamps, luer syringes, catheters, oxygen tents.

Louisville Regional Office, 412 West Market Street, Louisville 2, Ky.; bids opened April 28. Among items for sale are large quantities of catgut, silkworm, braided silk, nylon, horsehair and kangaroo sutures and wound clips.

Indianapolis Subregional Office, 2005 Northwestern Avenue, Indianapolis; bids to be opened April 29. Among articles for sale are whirlpool baths, eye magnet, clinical lamp, tantalum foil, Thomas splints. The bids to another sale under the jurisdiction of this subregional office will be opened April 28 and include, among other things, gauze bandages, food carts, hospital screens, crutches and first aid kits.

Seattle Regional Office, 1409 Second Avenue, Seattle; bids received until 11 a. m., April 22. Among the items for sale are blood transfusion apparatus, dermatome cement, rubber blankets and bedside tables.

PHYSICIANS SEPARATED FROM SERVICE

ARMY MEDICAL CORPS OFFICERS RECOMMENDED FOR/OR RELIEVED FROM ACTIVE DUTY

Alabama

Bell, Hugh V. Jr.	Grady
Relfe, Conyers B.	Mount Meigs
Stabler, Aubrey A.	Greenville
Tildon, Toussaint T.	Tuskegee
Weatherly, George I. Jr.	Ft. Payne

Arizona

Risser, Christian F.	Tempe

Arkansas

Noel, Elmer, H.	Ft. Smith
Oldham, Hershell B.	Helena
Riley, James R.	Pine Bluff

Colorado

Freed, Charles R.	Denver
Mizer, Floyd R.	Denver
Tilden, James F.	Olathe

Connecticut

Dunn, Morris L.	New Britain
Fleisher, Philip	Bridgeport
Messina, Michael C.	Hartford
Singh, Harkishen	Windsor
Stonington, Oliver G.	Darien

District of Columbia

Koch, Leslie C.	Washington
McClung, Marshall L.	Washington
MacMurray, Frank G.	Washington
Mangham, Charles A.	Washington
Paul, Norman	Washington
Weinberg, Benjamin A.	Washington

Florida

Patterson, James N.	Jacksonville
Patton, Sherrel D.	Sarasota
Simon, Sydney M.	St. Petersburg

Indiana

Blake, William B. Jr.	Marion
Duffner, Robert J.	Ft. Wayne
Frantz, Mount E.	Danville
Herrold, Don W.	Grass Creek
Houser, Harold B.	N. Liberty
McNamara, John P.	Noblesville
Miller, Charles J.	Greensburg
Rosenak, Bernard D.	Indianapolis
Schantz, Richard	Remington
Travis, Julius C. Jr.	Indianapolis
Van Arsdall, Clarence R.	Terre Haute
Williams, Charles E.	Dale
Wills, Max B.	Anderson

Iowa

Bartel, Robert M.	Council Bluffs
Cobb, Elliott A.	Sioux City
Nelson, Frederick L.	Ottumwa
Scannell, Raymond C.	Carroll
Struble, Gilbert C.	Ottumwa
Tyler, William H.	Iowa City

Kansas

Moore, Robert H.	Lansing
Slavin, Manuel	Leavenworth

Kentucky

Jones, Hubert C.	Bedford
Otis, Edwin J.	Ashland
Peery, Clarence E. Jr.	Majestic
Starr, Robert R.	Glasgow
Threlkel, Frank H.	Beaver Dam
Trangsrud, Howard A.	Louisville

Louisiana

Bendel, William L. Jr.	Monroe
Hennigan, Henry W.	New Orleans
Miller, Roger F.	Jennings
Phillips, Stonewall J.	Alexandria
Soileau, Gordon E.	Ville Platte

Maryland

Buettner, Henry F.	Baltimore
Clarke, Harry G.	Perry Point
French, Samuel L.	Rumbley
Gaalaas, Alban F.	Pasadena
Kibbe, Frank W.	Catonsville
Moses, Benjamin B.	Baltimore
Richardson, Edward J. Jr.	Baltimore
Tietze, Christopher	Baltimore
Turner, Roy B. Jr.	Baltimore
Urlock, John P. Jr.	Baltimore

Massachusetts

Bigelow, Frederick S.	Concord
Denniston, Baron D.	Boston
Dunn, Russell A.	Baldwinsville
Kemler, Norman	Medford
McLaughlin, Joseph H.	Dorchester
Moore, George R.	Somerset Center
Nelson, Roy W.	Attleboro
Nochimow, Eliezer	New Bedford
Schwartz, Theodore	Springfield
Simonetti, Louis J.	Lexington
Stein, Tobias	Boston
Sturgis, Somers H.	Cambridge
Townsend, James H.	Boston
Weidman, Abraham	Cambridge
Zalon, Leo	Bridgewater

Michigan

Benson, Davis A.	Detroit
Combs, Robert G.	E. Lansing
Cosgrove, William J.	Grand Rapids
Meade, William H.	Lansing
Mudd, Richard D.	Saginaw
Mullenmeister, Hugh F.	Battle Creek
Risk, Robert D.	Muskegon Heights
Steiner, Max	Detroit
Tinetti, Ernest F.	Laurium
Van Ark, Bert	Eaton Rapids
Weisberg, Jacob	Detroit

Minnesota

Anderson, Chester A.	Buffalo
Lengby, Frederick A.	St. Paul
Mattson, Hamlin A.	Minneapolis
Olson, Albert J.	Cloquet
Phares, Otto C.	Minneapolis
Posch, Joseph L.	St. Paul
Rossberg, Raymond A.	St. Paul
St. Cyr, Kenneth J.	Osseo
Tifft, Cyril R.	St. Paul
Van Hale, Laurence A.	Minneapolis

Mississippi

Crews, John P.	Inverness
Meriwether, Lodwick S.	Jackson

Missouri

Becker, George H.	St. Louis
Foster, Leon	St. Louis
McCorkle, Elbert L.	Marshall
Milder, Benjamin	Clayton
Nelson, Charles S.	Kansas City
Rice, Grover C.	Kansas City
Schill, Austin E.	St. Louis
Tahir, Mohammad	St. Joseph
Trotter, Francis O. Jr.	Kansas City

Nebraska

Anderson, Thorwald R.	N. Platte
Mac Innes, Kenneth A.	Omaha
Stappenbeck, Richard F.	Brock

New Hampshire

Eastman, Cyrus D.	Monroe
McCooey, James F.	Dover
Solomon, Philip	Franklin

North Dakota

Miller, Samuel	Ellendale

Ohio

Backiel, Leonard A.	Cleveland
Cowan, Abe M.	Maple Heights
Cranmer, Linus R.	Steubenville
Fletcher, Paul F.	Cincinnati
Langan, Paul C.	Akron
Lowenthal, Gerson	Cincinnati
Moore, John M.	Piney Fork
Mowry, Benjamin F.	Findlay
Orebaugh, John E.	Norwalk
Phillips, Roy A.	Cincinnati
Polot, David M.	Cleveland Heights
Risley, Clarence T.	Conneaut
Robinett, Robert W.	Chillicothe
Schmiesing, Werner F.	Minster
Smith, Quentin, B.	Bellevue
Twinem, Adrian C.	Cincinnati
Updegraff, Ralph K.	Lakewood
Vogelsang, Aaron D.	Toledo
Votypka, Joseph A.	Cleveland
Werner, Merrill J.	Dayton

Oklahoma

Bolton, Houck E.	Oklahoma City
Ohl, Charles W.	Chickasha
Water, Claude B.	Duncan

Oregon

Lawson, Earl L.	Portland
Skelley, Leo C.	Portland
Smith, Charles H.	Portland

Pennsylvania

Bellarmino, Francis M.	Philadelphia
Blumer, Max A.	Pittsburgh
Cooper, Ray C.	Tower City
Dasch, Frederick W.	Forty Fort
Derr, Frederick S.	Williamsport
Dyson, John M.	Hazleton
Gibson, Frederick C.	Latrobe
Haeckler, William S.	Pittsburgh
Johnson, Alfred T.	W. Reading
Junk, Ivan D.	New Albany
Kumian, Edward S.	Philadelphia
Lavelle, James P.	Scranton
McCullough, John D.	Coatesville
Pirrung, Mathew C.	Altoona
Reynolds, Arthur S.	Llanerch
Rice, Donald H.	McKeesport
Rudnick, Herman D.	Philadelphia
Schloss, Eugene M.	Philadelphia
Schwab, Carl L.	Harrisburg
Smiley, Bernard	Scranton
Stewart, Harry L. Jr.	Philadelphia
Toewe, Clinton H.	Lansdale
Tucker, Harry E.	Philadelphia
Valverde, Mario F.	Scranton
Warakomski, Alphonse S.	Nanticoke

South Carolina

Bell, John W.	Greenville
Fuller, Lawrence S.	Columbia
Timmerman, Wm. Bledsoe	Charleston

Tennessee

Armstrong, John L.	Somerville
Galbraith, Ben T.	Henderson
Phillips, Paul G.	Nashville
Prescott, Kenneth H.	Mountain Home
Puryear, Thomas R.	Lebanon

Utah

Bingham, Leonard J.	Salt Lake City
Brewerton, Joseph O.	Salt Lake City
Burdett, Ray E.	Ogden
Carter, Grover C.	N. Logan
Mohr, Alzon J.	Providence
Paul, Leslie J.	Salt Lake City
Smith, Silas S.	Salt Lake City

Vermont

Woodruff, Frank E.	Barre

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

CALIFORNIA

Annals of Western Medicine and Surgery.—This new monthly journal began publication in March under the auspices of the Los Angeles County Medical Association. With an initial circulation of 7,500 copies it will serve three medical schools and more than 5,000 physicians in Los Angeles County alone. Contributions of fairly general rather than technical interest are preferred, as the majority of those who receive the *Annals* are engaged in general practice. The need for such a publication has become apparent since the *Southern California Practitioner*, founded in 1886, was discontinued in 1943 for lack of financial support. Dr. Edmund T. Remmen, Los Angeles, is the editor.

Organize Emergency Centers.—The board of supervisors of Los Angeles County has ordered to be organized a chain of seventy-one emergency hospital and ambulance centers, which would be responsible for transporting injured persons to regular hospitals nearest the scenes of accidents. Incorporated communities in the county were urged to pay for the services given persons injured within their boundaries through contracts with the county. Private ambulance operators and hospitals are expected to furnish the personnel and equipment for this work under county contracts. The cost of the program, including installations, is estimated at about $70,000 for the first year, according to the Los Angeles *Times*. This plan is expected to clear up the confusion that exists when injured persons have been left for some time where an accident occurs because of disputes as to which community should assume responsibility in caring for them.

Annual State Medical Meeting.—The seventy-sixth annual session of the California Medical Association will meet April 30-May 3 at the Biltmore Hotel, Los Angeles, under the presidency of Dr. Samuel J. McClendon, San Diego. In addition to numerous presentations by Californians, the following from other states will speak:

Dr. Ashley W. Oughterson, New York, The Diagnostic Problem in Gastrointestinal Cancer.
Dr. Albert M. Snell, Rochester, Minn., Infectious (Viral) Hepatitis and the Public Health.
Dr. Hobart A. Reimann, Philadelphia, Periodic Diseases.

The fourteen sections have arranged extensive programs to be presented by members of the association. The Section on General Medicine will have a panel discussion of virus diseases Wednesday, another on diseases of the stomach Thursday, and a symposium on "What's New" on Friday. There will be a clinical pathologic conference Friday afternoon. The Section on General Surgery will hold a symposium on back pain Thursday afternoon and a panel discussion on breast tumors Friday morning. A symposium on arthritis and another on urinary tract infections are part of the program of the Section on General Practice. The Woman's Auxiliary will also meet at the Biltmore April 30 to May 2.

CONNECTICUT

Cancer Consultative Clinic Opened.—The first cancer consultative clinic sponsored by the Connecticut Cancer Society opened January 28 with five physicians in attendance. The clinic, which will serve persons throughout the state, is open Tuesday mornings from 9 to 12 at McCook Memorial Hospital, 2 Holcomb Avenue, Hartford.

Rehabilitation.—At the first public meeting of the newly organized Connecticut Rehabilitation Association, held recently in New Haven, Dr. Howard A. Rusk, head, department of rehabilitation and physical medicine, New York University College of Medicine, and associate editor of the New York *Times*, spoke on "Restoration of the Disabled to Useful Living."

Commission on Alcoholism.—The former Yale School Plan Clinics have been taken over by the commission on alcoholism of the state of Connecticut. The commission was created in 1945 by the general assembly along with a state fund for inebriates and was charged with planning for outpatient and inpatient care and treatment and detention of patients suffering with alcoholism. Dr. Theodore P. Sohler, who has been at the Psychiatric Clinic of Yale School of Medicine at New Haven Hospital as physician in charge, has been added to the staff as a full time clinical psychiatrist. Additional clinics or facilities are to be set up in the major population centers of the state. Dr. Dudley P. Miller, New Haven, executive director of the commission, said he hoped to establish relations with private, municipal and state social agencies, hospitals and courts whereby the work of the commission and the agencies may be of mutual benefit in caring for alcoholic addicts.

GEORGIA

Prize to Encourage Writing.—An annual prize of $100 for the best paper or case report by a younger member of the Fulton County Medical Society will be given by Drs. Walter W. Daniel and John C. Ivey, Atlanta. The recipient must, at the time he makes his presentation, have been a member of the society for not more than five years, provided he joined within six months after completing his hospital training. The award will be made at the annual meeting each year.

Annual State Medical Meeting.—The Medical Asssociation of Georgia will hold its ninety-seventh annual session April 22-25 in Augusta at the Bon Air Hotel under the presidency of Dr. Ralph H. Chaney, Augusta. The house of delegates will meet Tuesday afternoon and evening. At the scientific sessions beginning Wednesday Dr. Edward L. Bortz, Philadelphia, President-Elect of the American Medical Association, will deliver the Abner Wellborn Calhoun Lecture. Among the other speakers will be:

Dr. Max M. Peet, Ann Arbor, Mich., Bilateral Supradiaphragmatic Splanchnicectomy in the Treatment of Arterial Hypertension.
Dr. Howard A. Howe, Baltimore, How Is Poliomyelitis to Be Controlled?
Dr. Clarence A. Good Jr., Rochester, Minn., Roentgenologic Diagnosis of Tumors of the Small Intestine.

The Woman's Auxiliary will hold its annual convention April 22-24. The annual banquet and dance will be Thursday at 7:30 p. m. Annual dinners for the alumni of Emory University School of Medicine, Atlanta, and the University of Georgia School of Medicine, Augusta, are scheduled for Wednesday night. Special societies having luncheons during the sessions are the Georgia Eye, Ear, Nose and Throat Society, the American Medical Women's Association, the Georgia Pediatric Society and the Georgia Roentgenological Society.

ILLINOIS

Typhoid Vaccine Given Following Flood.—About 1,000 residents of Chicago Heights and Robbins were given typhoid vaccine April 8 following the preceding week's flood in the southern and western parts of Cook County. Dr. Edward A. Piszczek, county health officer, announced that a series of three weekly injections will be offered to some 6,000 persons.

Appoint Superintendent of Sanatorium.—Dr. Robinson Bosworth, East St. Louis, former president of the National Tuberculosis Association, has signed a three year contract as medical director and superintendent of the Rock Island County Sanatorium. He was formerly employed as medical director at the Rockford sanatorium and in 1937 was employed in St. Clair County, where he built the new sanatorium and served as medical director until 1946. Dr. Bosworth received his M.D. degree at Jefferson Medical College of Philadelphia in 1905.

Health Departments Consolidate.—Election returns of April 1 recorded a vote in Adams County for consolidation of the Quincy Public Health District with the Adams County Public Health Department by a plurality larger than any received by candidates for office, according to Dr. Roland R. Cross, Springfield, state director of public health. Consolidation approved by vote was a necessary step in securing an over-all public health service for Adams County including the city of Quincy. The Adams County Board of Health will assume jurisdiction over the Quincy area March 31, 1948.

Chicago

Society News.—At the annual meeting of the Chicago Dermatological Society Drs. Francis W. Lynch, St. Paul, was elected president, Stephen Rothman vice president and Leonard F. Weber secretary-treasurer.

The Zeit Memorial Lecture.—The Frederick Robert Zeit Memorial Lecture will be delivered on May 15 at 4 p. m. in Thorne Hall by Dr. W. Barry Wood Jr., Busch professor of Medicine, Washington University School of Medicine, St. Louis, on "Mechanisms of Recovery in Bacterial Pneumonia." The lecture is sponsored by the Xi chapter of Alpha Kappa Kappa, Northwestern University Medical School, Chicago, in honor of the late Dr. Zeit, former professor of pathology.

INDIANA

Personal.—Rolla N. Harger, Ph.D., professor of biochemistry and toxicology in the Indiana Universtiy School of Medicine, Bloomington-Indianapolis, has joined the staff of the Indiana Bureau of Industrial Hygiene as consultant on toxicology.

Diphtheria Prevention in Sullivan County.—In 1937 the Sullivan County Medical Society began a program of immunization against diphtheria in the county to continue for ten years or longer if necessary to evaluate the results. During the past ten years more than 9,000 persons, or one third of the population of the county, have been given diphtheria toxoid immunization. Most of the counties bordering on Sullivan County have had mild epidemics of diphtheria since 1936, but only 4 cases have been reported in Sullivan, 3 in 1938 and 1 in 1944, all in families that had not been immunized. In the previous decade 1927 to 1936 Sullivan County reported 109 cases of diphtheria with 19 deaths. In the decade ended with 1945 there were 8,053 cases of diphtheria, with 659 deaths reported in the entire state of Indiana.

MASSACHUSETTS

Diphtheria in Boston.—The health commissioner of Boston, Dr. John H. Cauley, reports that the number of cases of diphtheria in Boston has continued to increase steadily and that immediate action must be taken to control the disease. In the six years preceding 1946 there were 179 cases with 10 deaths and in 1946 there were 157 with 10 deaths. During January and February 66 cases developed in Boston, the greatest number that has occurred in any two months during the last fifteen years. A citywide campaign for diphtheria immunization has been conducted. Physicians are urged to emphasize the need for immunization and booster doses. The health department advocated that all children be taken to their own physician or, where not practical, to clinics provided by the health department and school authorities. Toxoid is available free of charge to all city culture stations.

Public Health Appointments.—Dr. Eugene R. Sullivan, Milton, has been appointed an assistant director, Division of Biologic Laboratories, Massachusetts Department of Public Health. Dr. Sullivan, recently a lieutenant colonel in the U. S. Army Medical Corps, served three years overseas as chief of laboratories, Sixth General Hospital, as consultant on blood and blood transfusions for the North African and Mediterranean theaters of operation and on a board for the study of the treatment of the seriously wounded. Formerly Dr. Sullivan held positions at Harvard Medical School, the Massachusetts General Hospital and the University of Michigan School of Public Health.——Dr. Salvatore R. Traina, Boston, former command surgeon of the Seventh Air Service Area Command in Tokyo, is now serving as physician in charge of the mobile unit of the State Blood Donor Program, Division of Biologic Laboratories, Massachusetts Department of Public Health. Dr. Traina served for twenty-eight months in the Asiatic-Pacific theater, being discharged with the rank of major.——Dr. Barbara F. Carter, Boston, has been appointed assistant district health officer of the North Metropolitan District, Massachusetts Department of Public Health. Dr. Carter formerly was house officer and assistant resident, Third Medical Service, Boston City Hospital.

NEBRASKA

Annual State Medical Meeting.—The seventy-ninth annual convention of the Nebraska State Medical Association will be held April 28-May 1 at the Hotel Paxton, Omaha, under the presidency of Dr. George E. Charlton, Norfolk. As a departure from the customary scientific program, afternoons will be devoted to informal panel discussions during which members will have an opportunity to present individual problems to guest speakers. During the morning sessions formal lectures will be delivered. The guest speakers will be:

Dr. Frank R. Peterson, Iowa City, Cancers in Small Bowel.
Dr. Willis M. Fowler, Iowa City, New Agents in Treatment of Blood Dyscrasias.
Mr. Frank E. Smith, Chicago, A Doctor Enters the Insurance Field.
Dr. Robert C. Bassett, Ann Arbor, Mich., Surgical Management of Intractable Pain.
Dr. John M. Sheldon, Ann Arbor, Urticaria and Angioneurotic Edema.
Dr. Cameron Haight, Ann Arbor, Diagnosis and Management of Bronchogenic Tumors.
Dr. Henry K. Ransom, Ann Arbor, Gastric Ulcer: End Results of Treatment.
Dr. William E. Adams, Chicago, Cancer of the Esophagus.
Dr. Park J. White, St. Louis, Treatment of Certain Serious Infections in the Newborn Infant.
Dr. Thomas K. Brown, St. Louis, Management of Difficult Labor.
Dr. Robert J. Crossen, St. Louis, Cancer Potential in Involuting Organs.
Dr. Philip Lewin, Chicago, Treatment in the Early Stages of Poliomyelitis.

Topics for panel discussion Tuesday are Medical and Surgical Aspects of Blood Dyscrasias, Surgical Treatment of Hypertension, Congenital Atresia of the Esophagus, Tracheoesophageal Fistula; for Wednesday, Surgical Aspects of Carcinoma of the Colon, Abdominal Allergy and Anuria and Oliguria; Thursday, The Rh Factor and Erythroblastosis, Vaginitis in Pregnancy, The Thymus Problem, Sterile Marriages and Functional Uterine Bleeding. The Tuesday evening dinner will be addressed by Dr. Harrison H. Shoulders, Nashville, Tenn., President of the American Medical Association, on "Some Problems in the Economics of Medical Care." The Woman's Auxiliary will meet April 29 to May 1. There will also be exhibits.

Physician Honored.—Dr. John A. Waggener, Humboldt, who is completing his seventy-first year of medical practice, was honored in one of the nationwide centennial radio broadcasts February 15, conducted by the American Medical Association. Dr. Waggener came to Richardson County in November 1878. He is 94 years old.

NEW YORK

County Society Meeting.—At a meeting of the Saranac Lake Medical Society, March 5, Dr. George W. Thorn, Hersey professor of the theory and practice of physic, Harvard Medical School, Boston, and physician-in-chief, Peter Bent Brigham Hospital, Boston, spoke on "Recent Advances in Hormone Therapy."

Hospital Centennial.—Rochester General Hospital, Rochester, will mark a century of service May 7. Open house at the hospital in observance of National Hospital Day May 12, clinic day, arranged by the medical staff at the Academy of Medicine, and a banquet at the Seneca Hotel May 15 are a part of the centennial celebration.

Dr. Loper Honored.—A testimonial banquet was recently given by the executive board of the Eastern Long Island Hospital and the medical staff in honor of Dr. Arthur C. Loper of Greenport, who has practiced medicine for fifty years in that community and served many years as chief of staff of the hospital. Dr. Loper, a graduate of the College of Physicians and Surgeons in Baltimore, is the oldest member on the hospital staff.

New York City

Personal.—Dr. Bernard Samuels, New York, will give the Montgomery Lecture at the annual meeting of the Irish Ophthalmological Society, Trinity College, University of Dublin, Ireland, May 22, on sympathetic ophthalmia.

Ragweed Control.—The health department's pioneer ragweed control program last summer resulted in a reduction in atmospheric pollen for that season to the lowest count since 1937. A short comprehensive course of instruction on the control of noxious plants for the directors and sponsors of control programs in communities in the metropolitan area is being arranged by New York University.

Annual Rheumatism Association Meeting.—The annual meeting of the New York Rheumatism Association will be held at the Cornell University Medical College April 19 at 2:30 p. m. Subjects to be discussed are "The Relationship Between the Sacroiliac and Spinal Findings in Marie-Strümpell Spondylitis," "Intravenous Procaine in the Treatment of Arthritis," "Further Developments in the Etiology of the Shoulder-Hand Syndrome," "Cardiac Manifestations of Rheumatoid Arthritis" and "Neuromuscular Changes in Rheumatoid Arthritis."

Course for Institutional Food Handlers.—A course in sanitation for institutional food handlers was begun recently in New York City by Health Commissioner Israel Weinstein in connection with a campaign to clean up eating places and improve food handling methods. The course, opened on March 22, is being continued on Saturdays for fourteen weeks in the Fort Green Health Center, Brooklyn, for persons in hospitals, homes and other institutions who supervise the handling of food, under the auspices of the Catholic Charities of the Diocese of Brooklyn. The course is similar to one being given by Dr. Weinstein in Manhattan.

Two Deaths from Smallpox.—Following the disclosure April 4 that an American business man who contracted smallpox in Mexico died in the Willard Parker Hospital for Contagious Disease in March, New Yorkers are responding to the suggestion that those who have not been vaccinated since childhood do so immediately. Of three other persons who subsequently developed smallpox one died and two are recuperating at the hospital. Special clinics set up at all health centers are open until 8 p. m., and all hospital authorities have been asked by the hospital commissioner to maintain twenty-four hour service in their emergency wards for vaccinations. An intensive campaign of vaccination is already under way. Under the health laws all persons having contact with smallpox must be vaccinated or be subjected to strict surveillance by the health department for twenty-one days. The city and state health departments have joined the U. S. Public Health Service in an effort to trace contacts made by the smallpox victim en route from Mexico to New York.

Health Department Closes Five Restaurants.—Five eating places were closed, temporarily at least, March 20 by the city health commissioner. Three of the restaurants had their kitchens and all equipment sealed, while two others shut their doors for repairs before the health department arrived. Notice had previously been sent to six restaurants to clean up within forty-eight hours or be closed. Places closed were a sandwich shop at 373 Lexington Avenue, whose manager has been fined three different times since last September for lack of sanitation. The C. & H. Cafeteria, 118 Grattan Street, and the R. & B. Delicatessen Restaurant, 767 Nostrand Avenue, were sealed. Both places had previously been fined in court. The cafeteria did not have a permit from the health department as required by law, the chief inspector of food and drugs said. The two that stopped service voluntarily were a bar and grill in Williamsburg, Brooklyn, and a catering-kitchen in a church center on the West Side of Manhattan. Since the restaurant cleanup campaign began last June 6, there have been 16,963 places inspected and 2,231 summonses have been served, resulting in 2,163 fines.

OHIO

Society News.—Dr. Paul R. Cannon, University of Chicago department of pathology and president, American Society for Experimental Pathology, addressed the Mahoning Medical Society, Youngstown, in February on "Recent Advances in Protein Nutrition."

Narcotic Violation.—Dr. M. F. Vereker, 71, of Hamilton was fined $8,000 and placed on probation for two years by U. S. District Judge John H. Druffel, March 19. Dr. Vereker, indicted the previous week for selling prescriptions for narcotics to addicts, was ordered to surrender his federal narcotic license. Judge Druffel suspended the prison sentence because of Dr. Vereker's advanced age.

OREGON

Oppose Increase in Office Rental Space.—The Multnomah County Medical Society, Portland, faced with a 25 per cent increase in office space rental imposed March 5 by the management of the Medical Dental Building, met with the dental society and passed a resolution "condemning the inflationary increase in office rent and other items of overhead expense." Dr. Willard F. Hollenbeck, president, Multnomah County Medical Society, said "the medical society feels that it is in the public interest to prevent any further increase which will reflect in the cost of medical care." The management of the Medical Dental Building, it is said, has increased rents 64.5 per cent over those of 1944. When the manager and owners of the Medical Dental Building were advised of the action of the societies and invited to meet and discuss the rental increase, they failed to appear.

PENNSYLVANIA

Ophthalmology and Otolaryngology Meeting.—The annual meeting of the Pennsylvania Academy of Ophthalmology and Otolaryngology is set for April 26-27 at the Penn-Harris Hotel, Harrisburg. The group will be addressed by Drs. William L. Benedict, Rochester, Minn., on "Tumors of the Orbit"; Thomas B. McCollough, Pittsburgh, "Surgical Considerations of Supposed Nasal Allergy"; Francis H. Adler, "Problems in Diagnosis and Treatment of Chronic Simple Glaucoma"; Albert P. Seltzer, Philadelphia, "How to Do a Complete Rhinoplasty and Common Errors in Nasoplastic Surgery"; LeRoy M. Polvogt, Baltimore, "Irradiation of the Nasopharynx," and Charles F. Kutscher, Pittsburgh, "Contusions of the Eyeball."

Pittsburgh

Occupational Disease Diagnostic Clinic.—The School of Medicine of the University of Pittsburgh has established an occupational disease diagnostic clinic at the Falk Clinic. Each Saturday it is open to cases referred by physicians for study and diagnosis only, the reports being transmitted on completion of study to the referring physician. Fees for necessary laboratory work or hospital expense when deemed advisable will be charged. The clinic will provide also facilities for graduate students in industrial medicine who are enrolled in the School of Medicine.

SOUTH CAROLINA

Annual State Medical Meeting.—The South Carolina Medical Association will hold its ninety-ninth annual session May 6, 7 and 8 at Myrtle Beach under the presidency of Dr. James C. McLeod, Florence. The sessions will be addressed by:

Dr. Robert H. Felix, Washington, D. C., Development of a Mental Hygiene Program in a State.
Dr. Eugene P. Pendergrass, Philadelphia, How to Prevent Death from Cancer of the Breast.
Dr. Alfred W. Adson, Rochester, Minn., Headache.
Dr. Jessie Wright, Pittsburgh, Acute and Convalescent Stages of Poliomyelitis in Respect to Responsibility of Physical Medicine.
Dr. J. Earle Moore, Baltimore, Treatment of Syphilis.

A new feature will be the round table discussion on Thursday morning. Doctors will be allowed six minutes each to present what's new in allergy, dermatology, pediatrics, cardiology, chemotherapy, gastroenterology, obstetrics and gynecology, surgery, orthopedics and otolaryngology. Following this, questions from the audience will be answered. At the banquet Wednesday evening at 8 o'clock Dr. Pendergrass will speak on "The Atomic Bomb from Personal Observation at Bikini," showing moving pictures.

Richland County Tuberculosis Program.—An x-ray survey and health education program in Richland County has been announced by Dr. Edward P. White, Columbia, director, county health department. Every school child from the eighth through the twelfth grade and a large portion of the adult population will be given an opportunity to have chest x-ray pictures made. A follow-up of all cases considered positive will be made by a worker from the Richland County Tuberculosis Association and by staff nurses of the county health department.

TENNESSEE

Personal.—Dr. Thomas Lee Gore has been appointed superintendent of the Davidson County Hospital, Nashville, to succeed Dr. Ralph C. Eades, resigned. Dr. Gore, a graduate of the University of Pennsylvania School of Medicine, Philadelphia, served in France during the first world war and was in the Army Medical Corps until 1939, when he retired and went into business in Texas.

Annual State Medical Meeting.—The Tennessee State Medical Association held its one hundred and twelfth annual meeting in Memphis April 8-10 under the presidency of Dr. Charles M. Hamilton, Nashville. Among the guest speakers were:

Dr. Abraham Levinson, Chicago, Diagnosis and Treatment of Meningitis.
Dr. George F. Lull, Chicago, Secretary and General Manager, American Medical Association.
Dr. Joseph G. Molner, Detroit, Epidemiology and Recent Developments in Poliomyelitis.
Col. William C. Porter, M. C., Houston, Texas, Neuropsychiatry for the General Practitioner.
Dr. Ursus V. Portmann, Cleveland, Role of Surgery and Radiation Therapy for Cancer of Breast.
Frank E. Smith, Ph.D., Director, Associated Medical Care Plans, Chicago, A Doctor Enters the Insurance Field.
Dr. Harrison H. Shoulders, Nashville, President, American Medical Association, Some Problems in the Field of Medical Economics.
Dr. Dudley C. Smith, Charlottesville, Va., Management of Early Syphilis.
Dr. Fletcher D. Woodward, Charlottesville, Va., Recurrent Nerve Paralysis of the Larynx.

TEXAS

Nontechnical Educational Program.—The Dallas County Medical Society initiated a new educational program for membership applicants with the purpose to prepare aspiring doctors for their nontechnical responsibilities to patients, the public and the profession. A series of three monthly lectures are to be given on the first Tuesday of each month at 7:45 p. m. in Baylor University Hospital Library, Dallas. The first lecture is on medical organization, the second on public relations and ethics, and the third on the legal aspects of medicine. The lectures are sponsored by the society's new preceptorship committee, of which Dr. Curtice Rosser is chairman. The Texas State Medical Association executive council last September recommended the establishment of orientation schools for new doctors in every community. Dallas is reported to be the first in Texas to establish such a school.

Grants to University Medical Branch.—Five grants for research have been made to the University of Texas Medical Branch, Galveston, as follows: Dr. James B. Nail and alumni associates of Wichita Falls have made an initial grant of $500 for the establishment of a research fund for the study of deafness. It is the intention of the alumni in the Wichita Falls area to maintain this fund by annual grants. J. B. Roerig and Company, Chicago, have granted $2,500 to the Tissue Culture Laboratory for research on factors involved in cellular growth. The National Foundation for Infantile Paralysis has granted $11,675 to support a study to develop a practical serologic test for the diagnosis of poliomyelitis. The Smith, Kline and French

Laboratories, Philadelphia, have made a two year grant of $6,000 for the support of pharmacologic studies of new compounds. Mr. Meyer and Mr. Jerome Epstein, San Antonio, have given a grant of $5,000 for the purpose of establishing the Leib Epstein Medical Student Loan Fund.

WISCONSIN

Memorial Fund.—Friends of Dr. William J. Bleckwenn, professor of neuropsychiatry, University of Wisconsin Medical School, Madison, Mrs. Bleckwenn and classmates have established a memorial fund for William J. Bleckwenn Jr., who died suddenly at the University of Wisconsin, where he was president of the third year class in the medical school. Contributions to the William J. Bleckwenn Jr. Memorial Fund may be sent to Dr. William S. Middleton, Dean of the Medical School, University of Wisconsin, 418 North Randall Avenue, Madison 6.

Dr. Waters Honored.—Dr. Ralph M. Waters, professor of anesthesia at the University of Wisconsin Medical School, Madison, and director of the department of anesthesia at the State of Wisconsin General Hospital, Madison, was awarded the Order of the Vasa from the king of Sweden March 17. The award was presented by Gösta Oldenburg, Swedish consul-general in Chicago, in recognition of the physician's wartime work in training Swedish doctors in anesthesia. The Swedish government has sent four physicians to the State of Wisconsin General Hospital for training under Dr. Waters. The Order of Vasa has been conferred since 1772 for service in science, literature and the arts.

State Board Appointments.—Drs. Forrester Raine, Milwaukee, and Samuel L. Henke, Eau Claire, have been appointed to the state board of health. Dr. Raine, a graduate of Boston University School of Medicine, was in practice in Milwaukee before entering military service as chief of surgical service at Camp Grant and later as surgical consultant in the Central Pacific area. Dr. Henke, who before his appointment practiced dermatology and syphilology and was a staff member of Luther and Sacred Heart hospitals, Eau Claire, is a graduate of the University of Wisconsin Medical School. In 1943 he became an officer in the Naval Medical Reserve Corps, serving at the Farragut, Idaho, naval base and in Hawaii.

PUERTO RICO

International Health Congress.—Puerto Rico was represented at two international health conferences held in Caracas, Venezuela, recently in the person of Dr. Juan A. Pons, San Juan, new commissioner of health in the insular government. Dr. Pons was a member of the U. S. delegation to the twelfth Pan American Sanitary Conference and second Pan American Sanitary Education Conference when those congresses convened.

Central Laboratory at Rio Piedras.—A central laboratory to serve all agencies of the Puerto Rican government is to be built at Rio Piedras, home of the University of Puerto Rico, with plans calling for construction early in 1948. The laboratory will be operated by the Puerto Rico Department of Health, but its facilities will enable it to conduct research on behalf of government agencies with widely diversified functions, according to officials of the department of health in San Juan.

Social Work Convention Held in San Juan.—Under the auspices of the Association of Social Workers of Puerto Rico, a convention was held at Rio Piedras, March 21-23. The causes and cure of delinquency were the chief topics of discussion. Other individuals and organizations interested in delinquency problems in Puerto Rico participated in the discussions. Dr. Angel D. Marchand, San Juan, assistant commissioner of health of Puerto Rico, was elected president of the association for 1947.

Recommend Social Security.—Puerto Rico has adopted local legislation and procedures which would facilitate extension of the Social Security Laws of the United States to this territory, and the U. S. Federal Security Agency has recommended to Congress that certain titles of the Federal Security Law be extended to persons in Puerto Rico who now lack the protection afforded by this law. Among the beneficiaries of this action would be the blind, the aged and dependent children.

Survey of Medical History.—Dr. Manuel Quevedo-Baez, San Juan, Puerto Rican physician and writer, and other members of the medical association of this island have cooperated in the publication of a comprehensive survey of medicine and surgery in Puerto Rico. This publication is in Spanish and covers the first volume of a series tracing medical progress on he island.

GENERAL

Science Editor Dies.—Willard L. Valentine, Ph.D., editor of *Science* magazine and chairman of the Department of Psychology at Northwestern University from 1940 to 1945; died at his home in Alexandria, Va., April 5, aged 42.

Student Loan Fund in Gynecology.—The Woman's Auxiliary of the Southern Medical Association has established the Jane Todd Crawford Student Loan Fund in gynecology for young Southern physicians. The student must be not over 32, must be of good character and must show evidence of good scholarship. The loan is to be returned in small instalments after completion of study. Inquiries may be addressed to Mrs. J. Ullman Reaves, 1862 Government Street, Mobile 18, Ala.

Symposium on Heredity.—The International and Spanish Speaking Association of Physicians, Dentists and Pharmacists held a symposium on Heredity in Genetic Diseases March 31 in New York. Dr. Bernhard Zondek, Jerusalem, Palestine; Clara J. Lynch, Ph.D., Rockefeller Institute, New York; Dr. Otto Marburg, Vienna University; Dr. George W. Henry, Cornell University Medical College, New York; Myron Gordon, Ph.D., New York; Dr. A. J. Blumgarten, chief endocrinologist, Lenox Hill Hospital, New York; G. Lawton, New York, and Dr. Hyman Chartock, New York, participated.

Meeting of Council of New England Medical Societies.—The second annual meeting of the Council of the New England State Medical Societies was held at the Harvard Club, Boston, April 16. Following the business meeting the group was addressed by Drs. Norman H. Gardner, East Hampton, Conn., on "State Planning for Rural Medical Services"; Reginald F. DeWitt and Lyall H. Middleton, Plymouth, N. H., "Group Practice in the Small Community," and Mr. Ambrose B. Kelly, associate general counsel of the Association of Factory Mutual Fire Insurance Companies, "Approaches to the National Health Question."

Educational Program on Mental Health.—An expanded program of public education on the problems and needs of mental patients will be undertaken by the National Mental Health Foundation through grants of $25,000 each from the Carnegie Corporation of New York and the Rockefeller Foundation. Additional grants of $25,000 each have been promised in 1948 from the Carnegie and Rockefeller funds, provided the National Mental Health Foundation can raise $122,000 through popular subscription. The foundation publishes pamphlets and training material for mental hospital personnel and produces radio programs designed to create a wider understanding of mental health problems.

Fellowships in Ophthalmology.—The Heed Ophthalmology Foundation for training eye surgeons after they have finished residencies has recently been established by Mr. and Mrs. Thomas Heed, Evanston, Ill., by a fund sufficient to support up to three fellowships each amounting to $2,500 to $3,000. They are available to citizens of the United States. A board of five ophthalmologists representing medical schools throughout the country will handle the fellowships. Application blanks and additional information may be obtained from the secretary of the board of directors, Dr. M. Hayward Post, 520 Metropolitan Building, 508 North Grand Boulevard, St. Louis 3.

Fraudulent Salesman.—A man calling himself E. G. King recently came to the office of a physician in Malden, Mo., as a salesman of a portable obstetrics table. A special discount for cash brought the cost to $70, which the physician paid by check. King claimed to be representing the Wonder Stretcher Bed Company of Mankato, Minn. After several weeks the table had not arrived and the physician wrote the company. Later he received an unsigned note saying that no such company existed. This person was 5 feet 5 inches tall, weighed 150 pounds and had light brown hair and regular features. The victim believes that the man had visited numerous other physicians in Missouri.

Society for Study of Arthritis.—The American Anti-Arthritis Association, incorporated in California last September, maintains offices in the Los Angeles County Medical Building, 1925 Wilshire Boulevard, Los Angeles. Its purposes are to unite scientific men and women in a broad program of education for the control of arthritis; the development of a more complete understanding of the disease and new technics of prevention and therapy; to promote and engage in research in arthritis and related fields; to operate with other agencies in carrying on its purposes, and to secure funds for carrying out its projects. Drs. Bernard L. Wyatt, Los Angeles, is president; John V. Barrow, Los Angeles, vice president, and Robert T. Pottenger, Pasadena, Calif., secretary-treasurer.

International Congress of Military Medicine.—The eleventh International Congress of Military Medicine and Pharmacy is scheduled to be held in Berne, Switzerland, June 2-7, for the first time since 1939. This organization was founded soon after World War I by a group of consulting surgeons with the Allied armies. Distinguished officers of various countries have served as president, the present incumbent being Major Gen. Charles R. Reynolds, retired, former Surgeon General of the U. S. Army. The International Committee, which activates the organization between sessions, has submitted the following questions for study and report at the meeting in June: 1. Methods of reviving the wounded (reporting countries Great Britain, France and Yugoslavia). 2. General account of modern methods of preventing epidemic diseases in armies (reporting countries United States, Switzerland and Great Britain). 3. Modern methods of evacuating sick and wounded; indications and contraindications (reporting countries Canada, Russia and Poland). 4. Role played by military medicine in the moral and the physical development of the soldier (reporting countries Belgium, France and Switzerland). 5. Comparative study of methods and devices to determine the concentration of hydrogen ions with a view to their use in military pharmaceutical laboratories (reporting countries Switzerland, France and Brazil). The International Committee of Military Medicine and Pharmacy has been cooperating with the International Committee of the Red Cross concerning the revision of the conventions of Geneva and of The Hague. The committee has put forth recommendations on this subject which were considered at the meeting of governmental experts of the International Committee of the Red Cross in Geneva in March. The president of the International Committee of Military Medicine and Pharmacy is General Reynolds and the secretary general is Surgeon Major General J. Voncken of Liége, Belgium.

Grants for Cancer Research.—The Jane Coffin Childs Memorial Fund for Medical Research, New Haven, Conn., has announced appropriations made by its board of managers on Nov. 15, 1946 and Feb. 21, 1947, totaling $202,616,66 for support of cancer research projects and fellowships. Grants of over $10,000 were made to:

Dr. Francisco Duran-Reynals, associate professor of bacteriology, Yale University School of Medicine, New Haven, $49,500 for three years for continued study of the factor influencing carcinogenesis by chemicals.

Leonell C. Strong, Ph.D., associate professor of anatomy, Yale University School of Medicine, $41,290 for three years for continued genetic investigations of cancer.

Dr. William U. Gardner, Ph.D., professor of anatomy, Yale University School of Medicine, $16,500 for three years for continued investigations of the role of hormones in normal and abnormal growth.

Dr. John G. Kidd, professor of pathology, Cornell University Medical College, New York, $14,580 for three years for continued study of viruses and cancer.

Dr. David A. Karnofsky, fellow, $13,500, for three years to work with Dr. Cornelius P. Rhoads at Memorial Hospital and the Sloan-Kettering Institute for Cancer Research.

Dr. Rhoads, director, and his associates at Memorial Hospital and Sloan-Kettering Institute for Cancer Research, $10,000 for one year for continued chemical and metabolic studies of cancer, with special reference to steroids.

An allocation of $10,000 for one year to be used for expenses of conferences, lectures, consultants and travel of investigators receiving grants from the fund.

Allocation of UNRRA Funds.—The United Nations Relief and Rehabilitation Administration recently transferred one and a half million dollars to the World Health Organization Interim Commission for partial continuation of UNRRA's health programs in certain countries. A subcommittee of the World Health Organization Committee on Administration and Finance, under the chairmanship of Dr. C. Vandenberg of the Netherlands, met in February in Geneva to study reports from countries which have been receiving health assistance from UNRRA. Provisional allocations were made, *inter alia,* for a number of purposes, including the teaching program in China and such field activities as the continuation of the basic health program in Ethiopia and malaria and tuberculosis control programs in Greece. Allocations were made also for fellowships in eight countries and for visiting lectureships, for supplying medical literature in various countries and for contributions to the salaries of specialists stationed in the New York and Geneva offices of the World Health Organization Interim Commission. Among those attending the Geneva meeting was Dr. H. van Zile Hyde, Bethesda, Md., of the U. S. Public Health Service. The Interim Commission met in Geneva again March 31. Medical and health leaders from all parts of the world, some 100 in all, attended. Among the organizations which sent observers to the meeting were the United Nations Educational, Scientific and Cultural Organization, the Social Affairs Department of the United Nations, the Food and Agriculture Organization, the International Refugee Organization, the International Children's Emergency Fund, the International Labor Organization and the Provisional International Civil Aviation Organization. The chairman of the Interim Commission, which is composed of eighteen member states, is Dr. Andrija Stampar, former vice chairman of the Economic and Social Council of the United Nations. The director of the Interim Commission headquarters office, 350 Fifth Avenue, New York, is Dr. Frank A. Calderone.

PHILIPPINE ISLANDS

The Philippine College of Surgeons.—The first issue (July-August 1946) of the *Philippine Journal of Surgery,* official organ of the Philippine College of Surgeons, reviews the establishment of the college in 1936 by the late Professor Gregorio Singian at a meeting in the old San Juan de Dios Hospital, of which he was director for many years. The last prewar meeting of the board of regents was held Aug. 29, 1941. During the Japanese occupation the Philippine College of Surgeons suffered the loss of its fiscal assets and many of its records as part of the ravages of the war; it resumed its meetings a few months after American troops drove the Japanese out. Even during these trying years many surgeons, whose ambition it was to become members of the college, kept records of surgical operations, a requirement of applicants, some of them doing so under great hardships. The purposes of the college are the elevation of standards of medical education and practice and the promotion of surgical science and art.

CANADA

National Cancer Institute.—A National Cancer Institute to coordinate all Canadian cancer control work was launched at a two day conference in Ottawa in January. One immediate objective will be the enlistment of every physician in the preparation of careful case records. Physicians will be urged to submit to the institute every possible angle of attack to further cancer control. An interim committee was appointed to proceed in dealing with grants and research projects while the National Cancer Institute is being legally incorporated. The chairman of the committee is Dr. Allan W. Blair, Regina, Sask. Dr. John L. Little, Guelph, Ont., is serving as executive secretary, with headquarters at the Jackson Building, Ottawa.

FOREIGN

Medical Science Center in Rome.—The Italo-American Center for Medical Science has been established in Rome, Italy, for the purpose of renewing cultural exchanges between Italy and the United States interrupted by the war. The center has been authorized by the Italian foreign office. The president is the minister of education, the vice president is the president of the American Relief of Italy and among the directors are the rector of the University of Rome, three professors and a representative of the foreign office. The address of the center is Via Torino, 122, Rome, Italy.

CORRECTION

Rickettsialpox.—In the article by this title in The Journal, March 29, page 905, second column, line 20, the word "lymphocytes" should have read "lymph vessels."

Marriages

Allison Mondoville Alderman Jr., Wilmington, N. C., to Miss Willie Ruth Edwards of Winston-Salem Dec. 16, 1946.

Carvel M. James, Beverly Hills, Calif., to Miss Norma Talmadge in Las Vegas, Nev., Dec. 4, 1946.

Aloysius Patrick Harney, New Bedford, Mass., to Miss Nina Louise Parker of Boston Dec. 28, 1946.

Andy Hall Jr., St. Louis, to Mrs. Martha Eileen Sanderson of St. Paul in November 1946.

Abraham A. Goetz, Baltimore, to Miss Natalie Wolf of Yonkers, N. Y., March 9.

Daniel K. Adler to Miss Rosamond Small, both of Syracuse, N. Y., February 16.

Martin Ackerman to Miss Lucille Diamond, both of New York, March 16.

Robert E. Bodwin to Miss Leona Corthier, both of Chicago, recently.

Deaths

George P. Muller ⊕ Philadelphia; born in Philadelphia, June 29, 1877; University of Pennsylvania Department of Medicine, Philadelphia, 1899; Grace Revere Osler professor of surgery at Jefferson Medical College of Philadelphia from 1939 to 1946, when he became professor emeritus of surgery; formerly professor of clinical surgery at the Medico-Chirurgical College, Graduate School of Medicine, University of Pennsylvania, and his alma mater; member of the founders group of the American Board of Surgery; fellow, member of the board of regents and past president of the American College of Surgeons; past president of the Philadelphia County Medical Society, Philadelphia Academy of Surgery, College of Physicians of Philadelphia and the American Association for Thoracic Surgery; member of the American Surgical Association and the Society of Clinical Surgery; served during World War I; served on the staffs of the White Haven (Pa.) Sanatorium, Rush Hospital for Consumption and Allied Diseases, Lankenau, Jefferson and Misericordia hospitals; received honorary degrees from the Villanova (Pa.) College in 1916 and the Muhlenberg College in Allentown, Pa., in 1937; on the editorial board of *Annals of Surgery;* died in Margate, N. J., February 18, aged 69, of cerebral thrombosis.

Earl Calvin Padgett ⊕ Kansas City, Mo.; born in Greenleaf, Kan., July 8, 1893; Washington University School of Medicine, St. Louis, 1918; professor of clinical surgery at the University of Kansas School of Medicine; professor of oral surgery and maxillofacial surgery at the Kansas City Western Dental College; diplomate of the National Board of Medical Examiners; member of the founders group of the American Board of Surgery; specialist certified by the American Board of Plastic Surgery; member of the American Surgical Association, Western Surgical Association and the American Association for the Surgery of Trauma; fellow of the American College of Surgeons; served in France during World War I; on the staffs of the Children's Mercy Hospital, Kansas City General Hospital, Kansas University Hospitals, Menorah Hospital and Providence Hospital, all of Kansas City, Kan., St. Mary's and St. Luke's hospitals; died Dec. 2, 1946, aged 53, of lobar pneumonia.

William Barnett Owen ⊕ Louisville, Ky.; born in Hart County, Ky., March 12, 1880; Kentucky University Medical Department, Louisville, 1903; clinical professor and head of the department of orthopedic surgery at the University of Louisville School of Medicine; chairman, Section on Orthopedic Surgery, American Medical Association, 1932-1933; specialist certified by the American Board of Orthopaedic Surgery; past president of the Clinical Orthopedic Society; member of the American Orthopaedic Association, Southern Surgical Association, Southeastern Surgical Association and the American Academy of Orthopaedic Surgeons; fellow of the American College of Surgeons, formerly affiliated with the U. S. Public Health Service; chairman of the staff of Kosair Crippled Children's Hospital; on the staffs of the Children's, St. Joseph and Kentucky Baptist hospitals and Norton Infirmary; died February 23, aged 66, of carcinoma of the stomach.

Victor Robinson, New York; born in Russia on Aug 16, 1886; Chicago College of Medicine and Surgery, 1917; also a graduate in pharmacy; professor of the history of medicine at the Temple University School of Medicine, Philadelphia; served as president of the New York Society for Medical History; founding member of the History of Science Society; an official delegate to the International Congress of the History of American Medicine, Leyden-Amsterdam, Netherlands, in 1927; a council member of the American Association of the History of Medicine from 1939 to 1941; fellow of the New York Academy of Medicine and chairman of its section on history and cultural medicine, 1944-1945; member of the Institute of Aeronautical Sciences; editor of the Pagel-Sudhoff Handbook of the History of Medicine and author of "Pathfinders in Medicine" and numerous other works; died January 8, aged 60, of coronary thrombosis.

Franklin Fayette Lane ⊕ Captain (MC), U. S. Navy, retired, Philadelphia; born in Elm, N. J., on Aug. 21, 1888; University of Pennsylvania School of Medicine, Philadelphia, 1915; member of the Medical Society of the State of Pennsylvania and the American Academy of Ophthalmology and Otolaryngology; specialist certified by the American Board of Ophthalmology and American Board of Otolaryngology; fellow of the American College of Surgeons; entered the medical corps of the U. S. Navy as a lieutenant (jg) in 1917; placed on the retired list January 1 after having served actively for about twenty-nine and one-half years; served as a member of the Naval Retiring Board, Navy Department in Washington, D. C.; died January 29, aged 58, of aneurysm of the aorta.

Lee Welsey Pollock ⊕ Rochester, Minn.; University of Minnesota College of Medicine and Surgery, Minneapolis, 1912; entered the Mayo Clinic as a member of the clinical staff in November 1914, appointed associate in medicine, and in April 1925 appointed head of a section in medicine; assistant professor of medicine at the Mayo Foundation; during World War I was a first lieutenant in the medical corps of the U. S. Army and served on the board of examiners for tuberculosis in various army camps; affiliated with St. Mary's Hospital, Colonial Hospital, Worrall Hospital and the Kahler Hospital, where he died February 2, aged 58, of left hemiplegia and pulmonary embolism.

Howard Gustav Schleiter ⊕ Pittsburgn; University of Pennsylvania Department of Medicine, Philadelphia, 1905; associate professor emeritus of medicine at the University of Pittsburgh School of Medicine; specialist certified by the American Board of Internal Medicine; fellow of the American College of Physicians; member of the American Clinical and Climatological Association; served in France during World War I; consultant at the Pittsburgh Diagnostic Center; on the staffs of the St. Francis Hospital and the Allegheny General Hospital, where he died February 5, aged 66, of hemorrhage due to peptic ulcer.

Charles Henry Hare ⊕ Boston; Harvard Medical School, Boston, 1889; an Affiliate Fellow of the American Medical Association; fellow of the American College of Surgeons; member of the Boston Society for Medical Improvement and the Boston Obstetrical Society; at one time instructor in gynecology at Harvard Medical School, Courses for Graduates, and on the faculty and dean of the Boston Polyclinic; served on the staffs of the City Hospital in Quincy, Mass., Boston Dispensary, Carney Hospital and St. Elizabeth's Hospital; died January 21, aged 84.

Joseph Albert Abercrombie ⊕ Richlands, Va.; Johns Hopkins University School of Medicine, Baltimore, 1930; served an internship and residency at Johns Hopkins Hospital in Baltimore; member of the state board of health; consultant on the Selective Service Board during World War II; on the staffs of the Grundy (Va.) Hospital and Mattie Williams Hospital; died January 12, aged 40, of cerebral hemorrhage.

Harold Edwin Andrews, Buffalo; Boston University School of Medicine, 1925; member of the American Medical Association; served during World War II; died January 21, aged 48, of coronary thrombosis.

Edna Blanche Averill, Springfield, Mass.; Boston University School of Medicine, 1910; died Dec. 25, 1946, aged 76, of bronchopneumonia.

William Thomas Baker ⊕ Louisville, Ky.; Hospital College of Medicine, Louisville, 1892; died in the Jackson Memorial Hospital, Miami, Fla., January 28, aged 76, of injuries received when struck by an automobile.

Cecil Ernest Barnett ⊕ Kirkwood, Mo.; National University of Arts and Sciences Medical Department, St. Louis, 1917; died in St. Mary's Hospital, Clayton, Dec. 23, 1946, aged 54, of coronary thrombosis.

Frederick James Bentley ⊕ Seattle; Rush Medical College, Chicago, 1901; specialist certified by the American Board of Ophthalmology; member of the American Academy of Ophthalmology and Oto-Laryngology and the Pacific Coast Oto-Ophthalmological Society; fellow of the American College of Surgeons; member of the staffs of the Children's Orthopedic and King County hospitals; died January 1, aged 71, of coronary embolism.

Francis Stephen Caldicott, Lowell, Mass.; Tufts College Medical School, Boston, 1913; member of the American Medical Association; served during World War I; designated examiner for the U. S. Veterans Administration; on the courtesy staffs of St. Joseph Hospital, St. John's Hospital and the Lowell General Hospital, where he died January 17, aged 57, of coronary thrombosis.

Benjamin Franklin Campbell ⊕ Burlington, Iowa; College of Physicians and Surgeons, Keokuk, 1897; Northwestern University Medical School, Chicago, 1904; died Dec. 31, 1946, aged 72, of hypertensive cardiovascular disease.

George Ralph Christie, Long Prairie, Minn.; Rush Medical College, Chicago, 1882; member of the American Medical Association; formerly mayor and president of the school board; died in the Asbury Hospital, Minneapolis, January 20, aged 89, of pneumonia following an operation.

Thomas Francis Coughlin Jr., Hoboken, N. J.; University of Tennessee College of Medicine, Memphis, 1917; served during World War I; on the staffs of the North Hudson Hospital, Weehawken and St. Mary's Hospital, where he died January 5, aged 63, of heart disease.

Frank Leander Crikelair, Green Bay, Wis.; Milwaukee Medical College, 1908; member of the American Medical Association; past president of the Brown-Kewaunee-Door Counties Medical Society; served during World War I; died January 13, aged 62, of coronary occlusion.

Matthias James Crowe, St. Louis; St. Louis University School of Medicine, 1927; served on the staff of the Christian Hospital, where he died January 17, aged 42, of cirrhosis of the liver and splenomegaly.

William Elton Day, Clarksville, Iowa; State University of Iowa College of Medicine, Iowa City, 1902; member of the American Medical Association; died January 9, aged 72, of coronary thrombosis.

Charles Edward Fisher, Lyons, Kan.; Northwestern University Medical School, Chicago, 1903; served as secretary of the Rice County Medical Society; affiliated with the Lyons Hospital, where he died January 19, aged 69, of heart disease.

William Dabney Gholston, Danielsville, Ga.; University of Georgia Medical Department, Augusta, 1900; member of the American Medical Association; secretary of the Tenth District Medical Society; past president of the Clarke-Madison-Oconee Counties Medical Society; formerly member of the state general assembly; died in Athens Dec. 18, 1946, aged 76, of cerebral hemorrhage.

George Henry Goode, Pittsburgh; Miami Medical College, Cincinnati, 1883; died Dec. 22, 1946, aged 85, of arteriosclerotic heart disease.

Herbert Lewis Johnson, Hadley, Mass.; Medical School of Maine, Portland, 1884; member of the American Medical Association; died Dec. 22, 1946, aged 87, of uremia.

Isaac William Jones ⊕ Los Angeles; Kentucky School of Medicine, Louisville, 1904; died Dec. 23, 1946, aged 70, of coronary arteriosclerosis.

Edward James Kendall, Detroit; Hahnemann Medical College and Hospital of Philadelphia, 1895; for many years on the staff of the Grace Hospital; formerly member of the city board of health; died January 10, aged 86, of carcinoma of the rectum.

Herman Kessler, Hatboro, Pa.; Hahnemann Medical College and Hospital, Philadelphia, 1939; member of the American Medical Association; received a military award for his work in the Selective Service System; died in the Jefferson Hospital, Philadelphia, January 10, aged 37, of carcinomatosis.

Herschel W. Lancaster ⊕ Nevada, Mo.; Beaumont Hospital Medical College, St. Louis, 1892; an Affiliate Fellow of the American Medical Association; on the staff of the Nevada Hospital; died January 17, aged 84, of chronic valvular heart disease.

Robert Edwin McBride ⊕ Las Cruces, N. M.; Medical Department of Tulane University of Louisiana, New Orleans, 1896; fellow of the American College of Physicians; at one time secretary of the New Mexico Medical Society and the Dona Ana County Medical Society; served as superintendent of the county school system, member of the school board, county health officer and local surgeon for the Atchison, Topeka and Santa Fe Railroad; director of the Bowman Bank; died January 17, aged 73, of cerebral hemorrhage.

William Smith McFarland, Zanesville, Ohio; College of Physicians and Surgeons, Baltimore, 1886; died recently aged 83.

Walter Wyatt McKay ⊕ Warren, Ohio; Western Reserve University Medical Department, Cleveland, 1910; fellow of the American College of Surgeons; past president of the Trumbull County Medical Society; member and past president of the staff of the Warren City Hospital; died recently, aged 65, of coronary thrombosis.

Olin Burr Martin, Williamsburg, Ohio; Ohio Medical University, Columbus, 1903; died recently in the Christ Hospital, Cincinnati, aged 67, of thrombosis.

Frank Leslie Matousek, Cicero, Ill.; Rush Medical College, Chicago, 1938; member of the American Medical Association; interned at the Chicago Memorial Hospital; served as a captain in the medical corps, Army of the United States, during World War II; died in Marshfield, Wis., Sept. 15, 1946, aged 42, of Addison's disease.

Charles Everett Nicholson, Pittston, Pa.; Medico-Chirurgical College of Philadelphia, 1915; member of the American Medical Association; served in France during World War I; on the staff of the Pittston Hospital; died January 19, aged 59, of coronary thrombosis.

William Ernest Oglesbee, Harveysburg, Ohio; Medical of Ohio, Cincinnati, 1890; died recently, aged 79.

Byron Palmer, Santa Monica, Calif.; Starling Medical Colllege, Columbus, 1900; served during World War I; lieutenant colonel, medical reserve corps, U. S. Army, not on active duty, died recently, aged 71, of coronary thrombosis.

John Samuel Phelps, Lynn, Mass.; Harvard Medical School, Boston, 1893; member of the American Medical Association; formerly medical director of the Columbian National Life Insurance Company; died Dec. 3, 1946, aged 80, of coronary occlusion.

Edward Reuben Prigger ⊕ Penns Grove, N. J.; Jefferson Medical College of Philadelphia, 1910; died Dec. 27, 1946, aged 57, of coronary thrombosis.

Edwin Almiron Riley ⊕ Park Falls, Wis.; Rush Medical College, Chicago, 1897; served during World War I; affiliated with the Park Falls Hospital; died January 21, aged 75, of carcinoma.

Amos Sherbon, Central City, Iowa; State University of Iowa College of Medicine, Iowa City, 1910; died in St. Luke's Hospital, Cedar Rapids, Dec. 27, 1946, aged 73, of thrombosis of the common iliac artery.

Frederick Joshua Simmonds ⊕ Boston; Middlesex College of Medicine and Surgery, Cambridge, 1917; died in the U. S. Naval Hospital, Chelsea, Dec. 6, 1946, aged 68, of cerebral thrombosis.

Allen Walters Sivyer, Milwaukee; University of Pennsylvania School of Medicine, Philadelphia, 1915; life member of the Milwaukee Academy of Medicine; for many years assistant medical director of the North Western Mutual Life Insurance Company; served in France during World War I; died in the Columbia Hospital Dec. 10, 1946, aged 55, of coronary thrombosis, old hemiplegia and arterial hypertension.

Eugene Albert Smith, Wauwatosa, Wis.; University of Pennsylvania Department of Medicine, Philadelphia, 1898; served as assistant clinical professor of surgery at the Marquette University School of Medicine, Milwaukee; veteran of the Spanish-American War and World War I; at one time physician at the state prison in Waupun; retired superintendent and clinical director of the Milwaukee County Dispensary-Emergency Unit; died Dec. 1, 1946, aged 76, of leukemia and heart disease.

Marshall Bruce Stewart, Dormansville, N. Y.; Temple University School of Medicine, Philadelphia, 1932; member of the American Medical Association and the Michigan State Medical Society; began active duty as a captain, medical corps, Army of the United States, in 1941; service terminated with rank of major in September 1945; died Dec. 3, 1945, aged 53, of cancer of the pancreas.

George Lyman Taylor, Warwick, Mass.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1885; died in Northfield Dec. 4, 1946, aged 85, of cerebral hemorrhage.

William Flint Tidwell, Pittsburg, Ill.; St. Louis College of Physicians and Surgeons, 1901; died January 17, aged 67.

John Metcalf Trible ⊕ Houston, Texas; St. Louis University School of Medicine, 1907; professor of urology and chairman of the department at Baylor University College of Medicine; past president of the Harris County Medical Society; served in France during World War I and later with the Army of Occupation; served at one time as chief of staff at Memorial Hospital, and was on the staffs of the Jefferson Davis, City-County and Methodists hospitals and St. Joseph's Hospital, where he died January 20, aged 62, of coronary occlusion.

DIED WHILE IN MILITARY SERVICE

Donald Richard McKay, Fargo, N. D.; Northwestern University Medical School, Chicago, 1941; served an internship at the Ancker Hospital in St. Paul and a residency at the St. John's Hospital in Fargo; began active duty as a lieutenant (jg) in the medical corps, U. S. Naval Reserve, on Nov. 9, 1942; promoted to lieutenant; killed in an explosion on the U. S. S. *Mount Hood* at Manus Island in the South Pacific Nov. 10, 1944, aged 30.

Thomas Gervase Walsh ⊕ Chicago; Rush Medical College, Chicago, 1923; served as associate professor of medicine at the University of Illinois College of Medicine; formerly on the faculty of his alma mater; interned at the Cook County and Mercy hospitals; a captain in the medical corps of the U. S. Naval Reserve and affiliated with the Naval Hospital at San Diego during World War II; served for two years in the Pacific theater; died Nov. 4, 1946 while on special leave, aged 50, of heart disease.

Foreign Letters

LONDON

(From Our Regular Correspondent)

March 8, 1947.

The Results of Prefrontal Leukotomy

The operation of prefrontal leukotomy was introduced by Moniz of Lisbon in 1935 for the treatment of certain forms of mental disease The idea was to break the connection between the patient's thoughts and his emotions, thus relieving mental tension The frontothalamic tract, which connects the prefrontal area with the thalamus, is divided with this object It is now possible to assess the results in a large number of cases treated in this country In 1935 the Board of Control (which controls the administration of all mental institutions) started an inquiry into the results in 1,000 cases. The operative risks include death from hemorrhage (19 cases in the series) or from a complication such as bronchopneumonia (4 cases), meningitis (3 cases), cerebral abscess, respiratory failure, subdural hematoma or empyema (of each 1 case), development of epileptiform fits or other postoperative symptoms, and changes of personality. The surgeon cannot be certain of cutting the frontothalamic fibers In a case recorded by A. Meyer a schizophrenic patient did extremely well, becoming happy and unworried But when he died of cancer of the esophagus eighteen months later necropsy showed that the frontothalamic fibers had not been cut and the nucleus medialis dorsalis had not degenerated Hence it is suggested that damage anywhere in the brain may have a beneficial effect in some of the cases

Of the 1,000 cases 348 occurred in males and 652 in females For statistical purposes the cases were grouped under the diagnoses of schizophrenia, manic-depressive insanity; neurosis (*a*) obsessional, (*b*) other; postencephalitic states; mental defect; epilepsy, various Patients discharged recovered amounted to 24 8 per cent and improved to 10 5 per cent making together 35 3 per cent of the patients treated Of these 9 3 per cent relapsed Only 1 per cent were made worse by the operation; 24 7 per cent remained in the hospital unchanged Of 6 per cent who died only half did so as a result of the operation, in 19 of these hemorrhage was the cause. Fits after the operation were reported in 3 3 per cent; only in 2 1 per cent was there more than one fit. For the schizophrenic patients treated there was a discharge rate—recovered or improved—of 23 per cent, excluding those who relapsed For the manic-depressive patients the discharge rate was fifty per cent

The board concludes that prefrontal leukotomy is usually a simple operation for the patient, if not always easy for the surgeon Complications are rare, and the death rate cannot be said to be high when the seriousness of the established mental disorder is taken into account Remarkable improvement in mental behavior follows in a large percentage of patients who have had severe symptoms with poor prognosis and have failed to respond to other treatment Many are discharged from the hospital and others have become more placid and easier to nurse. The operation should be done only after each case has been carefully considered by experienced psychiatrists

Tests With Streptomycin

The Ministry of Health reports that clinical tests are being carried out with the American drug streptomycin by the Medical Research Council. Until they are completed it is not possible to assess the value claimed for the drug and to determine the best methods of use The latest American opinion indicates that its value in tuberculosis is still unproved The minister of health does not wish to hamper individual doctors and hospitals in their endeavors to obtain any new drugs which they consider may benefit their patients, but it must be emphasized that streptomycin is potentially dangerous and may have serious ill effects, including permanent giddiness and deafness The minister states that not enough is known about the drug at present to justify action by the government to make it more freely available For instance in a very small number of patients with tuberculous meningitis whose life has been prolonged by this treatment there has been nearly always permanent serious mental derangement, blindness or deafness. Steps are being taken to accelerate production in this country so that supplies may be available if the clinical trials are favorable.

Research in Geriatrics

The trustees of the Nuffield Foundation have offered the University of Cambridge the sum of $80,000, with a possible further $72,000, for research under Professor F. C. Bartlett at the psychologic laboratory into the causes and results of aging, with particular reference to adults and to the characteristics and changes of human function associated with different age groups It is proposed that the gift shall include $8,000 for capital outlay, with a further $2,400 a year for three years and a possible renewal for another three years.

PARIS

(From Our Regular Correspondent)

March 26, 1947.

Doctors and Old Age Insurance

The extension, starting with old age insurance, as from the 1st of January of the National Security law to all French citizens and especially to isolated workers and to members of the liberal professions, has aroused reactions among those concerned The National Council of the Order of Doctors has taken the initiative of convening qualified representatives of all the liberal professions (pharmacists, dentists, midwives, veterinarians, barristers, chartered accountants) in order to reach a similarity of action on this subject After the delegates of these orders got in touch with the Social Security Fund, the director of this organization made the statement that the Social Security law must be extended obligatorily to every Frenchman, and no exception for the liberal professions is possible, the import of the law being the national solidarity On the other hand, he admits professional solidarity and sees no inconvenience in the creation of supplementary autonomous funds to cover the risks of illness, old age and death The social security organization is considering the abolition in the near future of the limitation of revenue for obtaining the allocation to aged workers, and this would allow everybody to benefit of the old age pension The president of the National Order of Doctors has already had interviews with the various Medical Mutual Help Societies with a view to promoting a federation of those in order to coordinate their activities.

Miscellaneous

The United States government has granted a certain allocation of streptomycin to the French Ministry for Public Health, which has appointed as treatment centers for Paris the Claude Bernard Hospital, the Hospital for Sick Children and the Trousseau Hospital and for Algiers the Hospital for Infectious Diseases

Among those who have been elected foreign associates to the Academy of Surgery are Surgeon General Paul R. Hawley; Dr E D. Churchill, Boston; Dr. E A. Graham, St. Louis; Dr. Alfred Blalock, Baltimore; Sir Alfred Webb-Johnson, London; H W. Bell Cairns, Oxford; J. M. Graham, Edinburgh; A. E. Porrit, London; Walter Rowley Bristow, London; Burdenko, Russia, posthumously; J. J. Djanneldze, Leningrad.

The twenty-sixth French Congress of Medicine will meet in Paris on the 16th, 17th and 18th of October.

MOSCOW

(From Our Regular Correspondent)

March 4, 1947.

The Conservation of Lenin's Body

In 1934 the Soviet government decided to preserve the body of Lenin, leader of the Great October Socialistic Revolution. It was decided to conserve it as it was on the day of Lenin's death on Jan. 21, 1924 and to erect a mausoleum. During the twenty-three years that have passed, about 20,000,000 people from all over the world have visited the mausoleum, now a national shrine of the Soviet Union. In 1924 science did not possess perfect methods for durable conservation, methods making possible a long conservation of the body with features unchanged so that they may be observed for centuries. The Egyptian method of embalming results in desiccation of tissues, with a shrinking of internal organs and shriveling of the skin. Thus the resemblance is completely lost. In the early middle ages there were attempts to embalm—for instance King Henry I of England (1135 A. D.) and Pope Alexander Fifth (1410 A. D.). These attempts failed because of numerous changes observed in a short time. The method of injecting of fluids into blood vessels widely used at present in the United States does not guarantee long preservation without change of external features. Aiming to obtain a durable conservation without alternation of features, the late professor of anatomy V. Vorobjev and professor of biochemistry B. Zbarsky used with excellent results the latest scientific discoveries. They were verified many times by special committees. Eminent scientists, members of those committees, Professors Abrikosov (anatomist), Orbelli (physiologist), Burdenko (surgeon) and others stated in their last scientific report that the problem of preserving Lenin's body for a long time was solved with great success. It is believed that the preservation will remain almost indefinitely. A special research laboratory is set up at the mausoleum, where Professor Boris E. Zbarsky continues his work with many collaborators. At present there is no doubt that future generations will be able to see Lenin in his mausoleum appearing as not dead but asleep.

Cytral

Vitamin A has a clearly determined antihistamine effect. Cytral is a "fragment" of vitamin A. It neutralizes the action of 1 Gm. of 1:50,000 histamine solution, while vitamin A and β-ionin neutralize it in a 1:15,000 solution. Benadryl is a synthetic antihistamine of an anesthetic type. It has a cumulative action which is absent in cytral. Cytral is a yellow oily liquid obtained from the seeds of coriandrum, a plant from the umbrella family. It was tested in the clinic of Professor Mikhaïl S. Vovsi (Moscow) and in other hospitals for hypertension as an aqueous or aqueous-colloidal solution. The dose varied between 12 and 25 mg. daily. Usually in ten to fourteen days the headache passed, high blood pressure fell and weakness diminished. In the incipient forms of pregnancy toxicoses vomiting and nausea disappeared. Cytral is most effective in keratitis, conjunctivitis and especially in glaucoma. Its positive action was verified by Professor Evgenia A. Kaminskaya-Pavlova of the Moscow Central Institute of Ophthalmology in the name of Helmholtz. Eye drops with cytral diminished pain and intraocular tension.

Soviet Physicians in India

The delegation of Soviet scientists at the thirty-fourth Indian Scientific Congress at Delhi recently returned to Moscow. Soviet medicine was represented by a parasitologist, Academician Evgeni N. Pavlovsky, head of the Tajik branch of the Academy of Sciences of the Soviet Union and by Professor Sultan Umarov, rector of the Central Asia University in Tashkent. They read reports on natural niduses of insect transmitted diseases. After the congress ten foreign scientists, including Academician Pavlovsky, were honored with a degree of doctor *honoris causa*, and they were received by Pandit Nehru, president of the Indian provisory government.

The Death of Professor Herzen

After a serious illness the surgeon Professor Piotr A. Herzen died in Moscow January 2. He was the grandson of the writer Alexander I. Herzen. He graduated at the Basel and Lausanne universities (Switzerland). In czarist Russia, foreign medical diplomas were not valid, and in order to get permission to work in his native Russia P. A. Herzen had to graduate a second time in 1898. Professor Herzen became president of the Moscow Surgical Society and in 1929 was president of the twenty-first All-Union Congress of Surgeons. Professor Herzen published about a hundred scientific works. He is widely known through all the medical world. He proposed fifteen new operative methods and performed himself about 20,000 operations. He was director of the Moscow Neoplasm Treatment Institute. Many of his former pupils are now occupying surgical chairs in the universities of our country. He was decorated by the government with several orders.

ITALY

(From Our Regular Correspondent)

March 17, 1947.

National Neurologic Convention

The first National Neurologic Congress was recently held in Genoa on the initiative of Professor De Lisi, director of the Neurologic Clinic of the University of Genoa. The purpose of the meeting was to give a new life to the Italian Neurologic Association, to define and to prepare the means for the teaching and hospital interests of this specialty, to establish scientific contacts among adepts of this medical branch for the first time since the war and after a long period of silence of the association (inactive for practically fourteen years). Two hundred scientific communications were presented in the program of the convention. The three chief groups of problems discussed were (1) physicochemical phenomena of transmission of nervous impulse, (2) diagnosis and treatment of herniated intervertebral disk and (3) symptomatology and etiology of arachnitis. Professor Spadolini of the University of Pisa read a paper on the changes effected by the action of the chemical mediators on the visceral effectors. Professor Visintini of Turin presented a critical review of the chemical concept of the mediation of acetylcholine in the transmission of nervous excitation. Professor Delitala of the University of Bologna told of his experience with more than 300 laminectomies performed for hernia of the intervertebral disk. Among all the mechanical changes which may cause sciatalgia of surgical type, hernia of the disk may most easily be demonstrated. In performing laminectomy a projection may be observed which reminds one of the nodes of the fingers; after the incision of the posterior ligament there appears white chafed tissue. After the removal of the herniated tissue the nerve root, which appears edematous and stretched, resumes its normal position. Dr. Bonola of Bologna concluded from x-ray examinations of the spinal cord and from myeloscopy carried out as an aid to the diagnosis of the localization of the posterior hernia of intervertebral disk that such investigation may furnish important elements to demonstrate the presence and the seat of the hernia and may confirm the facts furnished by neurologic examination. Myeloscopy was carried out by means of a board which may suitably be dipped and which has been designed by the Instituto Rizzoli di Bologna. Professor Neri of Bologna illustrated the symptomatologic value of the electric exploration of the paravertebral spinal region. In 40 cases of hernia of the disk with symptoms of sciatalgia faradic stimulation revealed intense pain at the level of the disk, radiating downward with a variable extent of 4 to 8 cm. Electric exploration likewise reveals zones of tabetic and syringomyelic hyperalgesia. Professor Belloni of the University of Padua discussed the roentgenologic diagnosis of encephalic arachnitis and recommended the use of arteriography by the percutaneous route to furnish useful data for the diagnosis of encephalic tumors. Professor Lunedei of the University of Florence presented etiopathologic reports on arachnoiditis and endocraniosis, asserting that the syndrome of Morgagni or of Stewart-Morel (endocraniosis), for which recently the term metabolic craniopathy has been coined by American authors, should be combined in a single morbid group together with chronic primary arachnitis, with some types of essential hemicrania and with some forms of chronic diencephalitis; for this group the term "chronic frontobasilar phlogosis" may be used. Professor Salotti of Siena spoke about roentgenologic symptomatology of chronic meningeal phlogosis and of endocraniosis; based on the x-ray observations three phases of the disease may be distinguished: an initial phase of hypertension and congestion, a second phase with incipient, irreversible changes of the skeleton and of the meninges and a third phase of definite and progressive changes of the skeleton. Encephalography by means of air and particularly cisternography proved to offer great symptomatologic aid to the diagnosis of arachnoiditis. The attendants of the convention voted for the reconstruction of the Italian Association of Neuropathology and Biology of the Nervous System, which should also enlarge its field by caring for the teaching and the hospital and professional interests of members of the specialty.

ANKARA

(From Our Regular Correspondent)

Jan. 15, 1947.

Ninth National Turkish Medical Congress

A national medical congress has been held every two years since 1925. At the fifth congress in 1933 delegates from neighboring countries also attended. Between 1938 and 1943 there was no meeting. At all congresses two topics have predominated, medical matters and those pertaining to health and social assistance. On the agenda have been reports on malaria, trachoma, tuberculosis, syphilis, cancer, scarlet fever, rachitis, rheumatism, influenza, intestinal parasites, toxicomania, eugenics, nutrition, infant mortality, hot springs and sports. Physicians of all organizations, military and civil service, private practitioners, pharmacists, dentists and chemists may attend the meeting. The membership fee is 3 Turkish pounds. Congress publications and proceedings are free of charge. A reduction of 20 per cent on transportation and at hotels is granted members coming from other parts of the country. Every congress is accompanied with an exhibition of domestic and foreign pharmaceutical preparations and public health propaganda. After the congress the health exhibition is open to the public. At the last congress medical and surgical instruments and hospital equipment of domestic origin were on view.

Under the auspices of Ismet Inönü, president of Turkey, and with Recep Peker the prime minister as honorary president, the ninth congress was held from October 21 to 23 and was attended by almost a thousand members from all parts of the country. Two main themes were debated, avitaminosis and health problems in rural communities. After a general discussion on vitamins, (*a*) biology and sources of vitamins in Turkey and (*b*) pathology and diseases of avitaminosis in Turkey in adults, the same subject in relation to children was taken up by Prof. Dr. Ihsan Hilmi Alantar and (*c*) the importance of vitamins in regard to food preparation by Prof. Dr. Burhan Tugan. Papers on rural health problems were read by Prof. Drs. M. Erel and B. F. Ural, the former concerning himself with general and individual measures to be taken in regard to sanitary installations in rural communities and the latter with the necessity for cooperation of government and public in connection with public health problems and health education in rural communities. Almost 80 per cent of Turkey's 20 million inhabitants are living in 40 thousand villages, which shows how urgent is immediate attention. Presentation of papers on the subject gave other members the opportunity of expressing their views, which gave rise to lively discussion. Seventy-three communications on other topics were received.

On the occasion of this congress the second microbiologic and the fifth surgical convention were also held in Ankara. The tenth medical congress is to be held in 1948 and is to last four days. The president is to be the minister of health and social assistance, and the topics will be industrial hygiene, the physician in industry and diseases of the thyroid.

Increase in Specialists

When the regulations pertaining to specialists were published in 1929 general practitioners were also treating diseases that really needed the attention of a specialist. In 1929 a commission of university professors and specialists of the Ministry of Health was appointed by the same ministry to investigate the certificates of all physicians professing to be specialists, obliging those whose certificates were unsatisfactory to undergo another examination before their certificates could be endorsed. Since then the number of specialists has been increasing steadily. Of the more than 5,600 physicians, 491 are specialists in internal medicine, 357 in surgery, 203 in obstetrics and gynecology, 170 in bacteriology, 145 in biochemistry, 144 in ophthalmology, 120 in dermatology and venereal diseases, 105 in pediatrics, 101 in otolaryngology, 94 in psychiatry and nervous diseases, 91 in radiology, 63 in urology, 32 in pathology, 25 in legal medicine and 14 in physical medicine. There are only 12 physicians engaged in hygiene and preventive medicine, which is a comparatively new field in Turkey. Most of these 12 physicians have been in the United States as recipients of the Rockefeller Foundation Fellowships, undergoing a course of training in this important branch.

For years most new graduates have specialized in internal diseases, obstetrics, surgery and pediatrics, while the number of those deciding to specialize in hygiene, bacteriology and research work has greatly decreased. For this reason the Ministry of Health decided to oblige a sufficient number of students who studied at the expense of the government and who graduated with highest marks to specialize in laboratory work at the Central Institute of Hygiene in Ankara. The time spent there in pursuit of these studies will be deducted from the obligatory government service. Most physicians in obligatory government service are employed as health officers in the eastern provinces.

Physicians in the National Assembly

The National Assembly usually opens after October 29, the anniversary of the republic, and terminates in June. If need arises the assembly may be called on to meet at any time.

The seventh assembly was in session till July 1946. So far 4,862 laws have been passed during the twenty-four years. At present there are two medical men in the Council of Ministers; one is Dr. Behcet Uz, the minister of health and social assistance, the other Dr. Sadi Irmak, the minister of labor. The late Dr. Refik Saydam was prime minister from 1939 till 1942. Of the 425 members 44 are physicians, 70 lawyers, 32 economists, 66 military men, 37 business men, 50 farmers, 50 educationalists, 70 administrators, 29 pressmen, 27 financiers, 12 diplomats, 7 dentists, 5 engineers, 2 pharmacists and 2 veterinarians. Of foreign languages spoken by members of the assembly 259 know French, 73 German, 40 English, 39 Arabic, 29 Greek, 22 Persian, 12 Russian, 11 Italian, 5 Armenian, 4 Bulgarian and 1 Spanish.

Correspondence

UROLOGIC COMPLICATIONS

To the Editor:—The terms "tidal drainage" and "tidal irrigation" used in the article "Urologic Complications in Injuries of the Spinal Cord" in The Journal, February 8, are confusing. As many different designs of tidal drainage apparatus have appeared in the literature, it is not clear which apparatus was on trial or, in fact, whether or not one type of apparatus was used for "tidal drainage" and another for "tidal irrigation."

It is to be expected that hand irrigation would be more effective than the use of the apparatus, because none of the commonly used tidal drainage designs are capable of irrigating the bladder in the usual sense of the term. These devices merely mix fluid very slowly with the urine in the bladder until a predetermined intravesical pressure is reached, at which point they aspirate the mixture. The efficiencies of the various designs vary widely: some of them aspirate quite forcefully for several minutes, and others cease aspirating as soon as the slightest resistance is encountered. Unfortunately, tests of some of the latest designs show that they aspirate very feebly, and they are therefore undependable when viscid material needs to be removed from the bladder.

Regardless of their efficiency, the nearest such apparatus can come to irrigating the bladder is mixing of irrigating fluid with considerable quantities of urine. In order to irrigate the bladder this mixture would have to be removed first, and then more fluid would have to be introduced rapidly into the bladder, to be followed by another aspiration of the bladder contents. In some cases irrigation will need to be multiple for maximum effectiveness, just as is the usual case when hand irrigation is used. By the incorporation of such multiple irrigation cycles into the design of such apparatus, we can be certain that the bladder is completely filled during each irrigation and that the maximum safe intravesical pressure is not exceeded, neither of which criteria is met by the ordinary technics of irrigation with a hand syringe. To my knowledge, only one design so far described is capable of irrigating the bladder in this way. Because it is a complex apparatus which has not been widely adopted, it is assumed that the authors were not referring to this type of tidal drainage and irrigation apparatus.

A standardized method for naming synthetic organ devices and bedside therapeutic apparatus is needed, for progress in this new field of therapy will be hindered by the general use of nonspecific terms such as "tidal drainage" or "tidal irrigation," especially when their efficacy is being questioned. The coining of such names will be difficult at best, and it is my hope that something better than the use of eponyms can be developed. Progress in this field will not be served by indulging in the personalities which eponyms necessitate whenever new apparatuses are described or old ones modified.

For the present I should like to recommend that apparatus be described by the use of diagrams or, where applicable, as in this case, by the use of time and pressure graphs which show the action of the apparatus under clinical trial. The latter suggestion is emphasized because my experience has shown the difficulty of estimating the action of such apparatus until it is actually being used in the care of the patient. Such graphic studies demonstrate the ineffectiveness of many types of tidal drainage apparatus; but they point the way to improved designs which more nearly replace the anatomic or physiologic defect which is exhibited by the patient. It appears possible that tidal drainage apparatus can be developed to the point where it will irrigate better and more dependably than is now possible with human labor, thereby pointing the way to removal of some of the tedium incident to the care of patients with neurogenic bladders.

Arthur E. MacNeill, M.D., Hanover, N. H.

TUBERCULOSIS

To the Editor:—In a communication to The Journal, Nov. 9, 1946 with this heading Dr. Dock states that the "absolute pressure on the cells" in the pulmonary capillaries equals the air pressure plus the weight of the blood column in the pulmonary artery. I want to point out that the total gas pressure in the alveolar cells is about atmospheric and in the venous blood of the pulmonary capillaries substantially less than atmospheric. As far as gases are concerned, no pressure is therefore exerted in the direction from the capillaries onto the cells but rather in the opposite direction. With regard to the addend in that equation, it represents only one factor of capillary pressure; the essential factors, namely, the energy of the heart contraction, arterial and venous pressure, and the width of the arterioles and capillaries, are completely disregarded in that calculation. On the basis of his equation Dr. Dock comes to the conclusion that a lowering of the pressure by 14 per cent, produced by a change in altitude, would make (according to my theory) "the entire lung far more susceptible than the apex at sea level." My explicit statement that "the curative effect of prolonged bed rest and of high altitude appear herewith in a new light" makes it clear that Dr. Dock's conclusion is entirely a sequel of his equation and not of my theory.

It is hard to see how anybody could possibly have "discarded" in the past my theory of apical predilection in adult tuberculosis for reasons conceived now for the first time by Dr. Dock "on the basis of data only recently established." It would, however, follow from those reasons that a change in altitude of 5,000 feet would make the entire lung far more bloodless than the apex at sea level.

As regards Dr. Dock's contention that my theory was based on "data chiefly from plant physiology," I should like to state that among the twenty-six data adduced in my paper (*Wien. klin. Wchnschr.* **33**:646 [July 15] 1920) only three were from plant physiology.

Ferdinand Roder, M.D., New York.

ARTIFICIAL LIMBS

To the Editor:—In Queries and Minor Notes in The Journal March 1, page 656, under the heading Artificial Limbs, you state that in larger cities there are concerns that assemble artificial limbs under their own trade mark.

This would give the reader the impression that legs are being purchased in sections, in different shapes and sizes, such as the ankle, shin and thigh, bolted or riveted together and the trade mark stamped on. This, however, is not the case because most of the concerns buy the wood in different shapes. It may be either square, hexagonal or octagonal, 1 to 3 feet long and is being cut with band or hand saw and carved with drawing knife, chisel, gouge or special tools and bored and shaped invariably by hand by men who are wood carvers. These men from experience became familiar with the shape and function of the human extremities to reproduce their shape and size. They fit the stump into this shaped timber and also apply hinges to correspond to human joints. Then the limb is reinforced with suitable material and supplied with necessary upholstering and harness attachments. Moreover, the individual who does this work should be justly referred to as an artisan. He seldom has a willing teacher, the result being that through great sacrifice and hardship he acquires the knowledge and skill to manufacture an artificial limb.

The remunerationn is far less than for other work for the amount of time it takes to acquire the knowledge and the patience one has to exercise in dealing with the customer.

This, I believe, is the main reason why higher caliber men are not found in this industry. In fact, the limbs that are being manufactured today are inferior to the ones made thirty years ago.

F. A. Ritter, Detroit.

GASTRIC LAVAGE

To the Editor:—May I comment on your editorial "Value of Gastric Lavage in Treatment of Acute Poisoning" based on the recent work of Harstad, Møller and Simesen (THE JOURNAL, March 1, p. 545)? According to these investigators gastric lavage is generally inefficient because little of the poison is recovered and because it promotes passage of the poison into the intestine and other structures. My discussion will be limited entirely to the technic of lavage.

With all due respect to the Copenhagen workers, it might be suggested that "lavage with a conventional stomach tube through an attached funnel" is hardly the way to evacuate a stomach in a hurry. No procedure based on siphonage can hope to do that. The only worse way is the use of a small tube passed through the nares. Unfortunately small caliber tubes have so widely come to replace the large tube technic for gastric aspirations, at least in this country, that many recent students do not seem to have learned the large tube technic at all. Hence my interest in writing you.

The best procedure for lavage, and I think I have tried them all, is the use of a large tube, 32-42 French, to the proximal end of which can be fitted an Ewald aspirating bulb (capacity 250 cc.). The first step is the evacuation of all gastric contents. This can be done almost quantitatively (except for the solid residues) by attaching the deflater bulb and allowing suction to do the aspiration. If the gastric content is large, several such aspirations will be required. After evacuation is as complete as possible, one begins the lavage proper by injecting a bulbful of water and then aspirating as mentioned, the alternate injection and aspiration of bulbfuls being repeated until the returns are clear. The procedure is equally safe in conscious and unconscious patients. This method is very old, but those unfamiliar with it will find it described and illustrated in my "Synopsis of Digestive Diseases," St. Louis, C. V. Mosby Company, pages 26, 27 and 47.

The proof of the efficacy of this method is obtained by weighing the patient before and after the lavage. Always there must be a loss unless the stomach is empty, when the weight will be stationary. All medical students should be trained to achieve this degree of skill.

The rest of the authors' conclusions logically follow from the technic they used. It is not surprising that only 75 per cent of 10 liters of wash fluid could be removed by siphonage, and introducing a large amount of fluid (which cannot be quickly and quantitatively recovered from the stomach) is sure to promote passage into the intestine! Furthermore, no amount of vomiting, whether induced by apomorphine or otherwise, can evacuate a stomach so rapidly, so completely and so gently as the aspiration technic described.

JOHN L. KANTOR, M.D., New York.

DANGER OF TRANSMITTING MALARIA BY TRANSFUSION

To the Editor:—I believe it would be desirable to renew a warning to medical practitioners that a danger exists in transfusing recipients from donors who have had a past malarial history.

Although I have no extensive data the transfer of infection has occurred on numerous occasions all over the country. A case reported by Sharnoff, Geiger and Selzer (*Am. J. Clin. Path.* **15**:494 [Nov.] 1945) was of particular interest because blood had been stored in a bank for eight days, yet a malarial infection was transferred. When blood is stored at low temperatures, the parasites seem to exist for a long period. The actual limits of time have not been established, but eight days would seem to be quite an interval for an active blood bank.

I have been told of a soldier who had been overseas under suppressive medication and never had had experience with malaria; yet, when his blood was used in this country many months later, a malarial infection occurred in the recipient. Such an occurrence is rather unusual now, although during the war it was seen quite frequently. Most of the men are now out of the malarious areas; hence that danger is minimized. In several thousand cases seen personally no less than a hundred men first had malaria in this country after withdrawal of the suppressive drug used overseas. One man had been off the drug thirteen months before his first attack occurred.

As a routine procedure I believe physicians should be advised never to use blood from any person who has had a past history of malaria. There is an instance in Denver where a Greek's blood was used and malaria resulted although the man had been away from Greece, where he acquired his original infection, for thirty-seven years.

All returning servicemen should be questioned closely about a pastmalarial infection. One instance occurred here in which a man was asked specifically whether he had had malaria and he replied in the negative. However, his blood was infectious for the recipient and, on requestioning, he stated that he was afraid that the patient would be denied blood needed very badly and he thought it was of no importance.

It would seem that a safe time limit for a serviceman in this country after withdrawal from the endemic malaria areas and without a past history of malaria would be two years, provided he had not used suppressive drugs in the interim.

L. T. COGGESHALL, M.D., Chicago.
Chairman, Department of Medicine,
University of Chicago.

DIFFERENT WEIGHT RESPONSES TO THE SAME PROVOCATION

To the Editor:—The week after Dr. S. Charles Freed's article on obesity appeared in THE JOURNAL (February 8, p. 369) there came under my observation a man and his wife who illustrated his statement that "personality will . . . influence the intake of food." The husband was thin, wiry and tense; the wife, plump and good natured. The man was referred to me with the history that two months previously he had begun to have epigastric pain after eating, loss of appetite, frequent nausea and weakness. He had lost 13 pounds (6 Kg.) in three weeks—from 146 to 133 pounds (66 to 60 Kg.).

Complete x-ray studies of the gastrointestinal tract and gallbladder were negative except for a diverticulum of the lower end of the esophagus. The explanation for the patient's symptoms was found when his wife told me that two months before I saw him he had had an anonymous long distance telephone call from a midwestern state informing him that his daughter was dead. Twelve years previously this girl had married against the wishes of both parents, had moved "somewhere out West" and had not kept in touch with them. An attempt to trace the source of the telephone call was unsuccessful, but detectives located the girl, who was living and in good health. She came back to visit her parents, and a reconciliation took place. Naturally both parents were under great emotional strain. While the father was losing 13 pounds, however, the mother gained 26 pounds (12 Kg.), her weight increasing from 176 to 202 pounds (80 to 92 Kg.). She admitted that when she was worried she could not help eating far more than when conditions were normal.

When the husband's x-ray studies had been completed and he was assured that he had no evidence of cancer, he was able to eat the heartiest meal he had consumed since the anonymous telephone call.

WINGATE M. JOHNSON, M.D., Winston-Salem, N. C.

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

NATIONAL BOARD OF MEDICAL EXAMINERS
EXAMINING BOARDS IN SPECIALTIES

Examinations of the National Board of Medical Examiners and the Examining Boards in Specialties were published in The Journal, April 12, page 1169.

BOARDS OF MEDICAL EXAMINERS

Alabama: Montgomery, June 24-26. Sec., Dr. D. G. Gill, 519 Dexter Ave., Montgomery 4.

Arkansas: * *Medical Examination.* June 5-6. Sec., Medical Board of the Arkansas Medical Society, Dr. L. J. Kosminsky, Texarkana. *Eclectic.* Little Rock, June 5. Sec., Dr. C. H. Young, 1415 Main St., Little Rock.

California: *Written.* San Francisco, July 7-10. *Oral.* San Francisco, May 10-11. *Oral Clinical Examination for Foreign Medical Graduates.* San Francisco, June 21. Sec., Dr. Frederick N. Scatena, 1020 N. St., Sacramento 14.

Delaware: *Examination.* Dover, July 8-10. *Endorsement.* Dover, July 15. Sec., Medical Council of Delaware, Dr. J. S. McDaniel, 229 S. State St., Dover.

District of Columbia: * *Reciprocity.* Washington, June 9. Sec., Commission on Licensure, Dr. George C. Ruhland, 6150 E. Municipal Bldg., Washington 1.

Florida: * *Examination.* Jacksonville, June 24-25. Sec., Dr. Harold D. Van Schaick, 2736 S. W. Seventh Ave., Miami 36.

Georgia: Atlanta, Oct. 14-16. Sec., Mr. R. C. Coleman, 111 State Capitol, Atlanta 3.

Hawaii: *Examination.* Honolulu, July 8-11. Sec., Dr. S. E. Doolittle, 881 S. Hotel St., Honolulu 53.

Idaho: Boise, July 14-16. Sec., Bureau of Occupational Licenses, Dr. S. M. Poindexter, Eastman Bldg., Boise.

Indiana: *Examination.* Indianapolis, June. Exec. Sec., Board of Medical Registration and Examination, Miss Ruth V. Kirk, 627 K. of P. Bldg., Indianapolis.

Kansas: *Endorsement.* Kansas City, June 26. Sec., Board of Medical Registration and Examination, Dr. J. F. Hassig, 905 N. Seventh St., Kansas City 10.

Kentucky: *Examination.* Louisville, Sept. 22-24. Sec., State Board of Health, Dr. P. E. Blackerby, 620 S. Third St., Louisville 2.

Maine: Augusta, July 1-2. Sec., Board of Registration in Medicine, Dr. Adam P. Leighton, 192 State St., Portland.

Maryland: *Medical Examination.* Baltimore, June 17-20. Sec., Dr. E. H. Kloman, 1215 Cathedral St., Baltimore. *Homeopathic.* Baltimore, June 10-11. Sec., Dr. J. A. Evans, 612 W. 40th St., Baltimore.

Michigan: * *Examination.* Detroit, June 9-11. Semi-Annual meeting, Lansing, June 24. Sec., Board of Registration in Medicine, Dr. J. E. McIntyre, 100 W. Allegan St., Lansing 8.

Mississippi: Jackson, June 23-24. Asst. Sec., State Board of Health, Dr. R. N. Whitfield, Jackson 113.

Missouri: *Examination.* St. Louis, May 26-28 and June 9-11. Exec. Sec., Mr. John A. Hailey, Box 4, State Capitol Building, Jefferson City.

Nebraska: * *Examination.* Omaha, June. Dir., Bureau of Examining Boards, Mr. Oscar F. Humble, State Capitol Bldg., Lincoln.

Nevada: *Written Examination.* Carson City, May 5. Sec., Dr. G. H. Ross, 215 N. Carson St., Carson City.

New Hampshire: *Examination.* Concord, Sept. 11-12. Sec., Board of Registration in Medicine, Dr. John S. Wheeler, 107 State House, Concord.

New Jersey: Trenton, June 17-18. Sec., Dr. E. S. Hallinger, 28 W. State St., Trenton.

New York: *Examination.* Albany, Buffalo, New York and Syracuse, June 23-26. Sec., Dr. Jacob L. Lochner Jr., State Education Bldg., Albany.

North Carolina: *Endorsement.* Raleigh, May 1, June 24. *Examination.* Raleigh, June 23-26. Acting Sec., Mrs. L. McNeill, 226 Hillsboro St., Raleigh.

North Dakota: Grand Forks, July 1-4. Sec., Dr. G. M. Williamson, 4½ S. Third St., Grand Forks.

Ohio: *Examination.* Columbus, June 17-20. Sec., Dr. H. M. Platter, 21 W. Broad St., Columbus.

Oregon: * *Endorsement.* Portland, April 25-26. Exec. Sec., Miss L. M. Conlee, 608 Failing Bldg., Portland 4.

Pennsylvania: Philadelphia and Pittsburgh, July. Acting Sec., Bureau of Professional Licensing, Department of Public Instruction, Mrs. M. G. Steiner, 351 Education Bldg., Harrisburg.

South Carolina: Columbia, June 23-25. Sec., Dr. N. B. Heyward, 1329 Blanding St., Columbia.

South Dakota: * Pierre, July 15-16. Sec., Medical Licensure, State Board of Health, Dr. Gilbert Cottam, Capitol Bldg., Pierre.

Tennessee: Memphis and Nashville, June 11-12. Sec., Dr. Harley W. Qualls, 1635 Exchange Bldg., 130 Madison Ave., Memphis 3.

Texas: Austin, June 17-19. Sec., Dr. T. J. Crowe, 918-20 Texas Bank Building, Dallas 2.

Virginia: Richmond, June 18-21. Sec., Dr. K. D. Graves, 306 Medical Arts Bldg., 30½ Franklin Rd., Roanoke.

Wyoming: *Examination.* Cheyenne, June 2. Sec., Dr. G. M. Anderson, Capitol Bldg., Cheyenne.

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* Basic Science Certificate required.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Arizona: June 17. Sec., Mr. Francis A. Roy, Science Hall, University of Arizona, Tucson.

Arkansas: Little Rock, May 7. Sec., Mr. L. E. Gebauer, 701 Main Street, Little Rock.

Colorado: Denver, June 4-5. Sec., Dr. Esther B. Starks, 1459 Ogden Street, Denver.

District of Columbia: Washington, April 21-22. Sec., Commission on Licensure, Dr. G. C. Ruhland, 6150 E. Municipal Bldg., Washington 1.

Florida: May 31. Final date for filing application is May 16. Sec., Dr. M. W. Emmel, University of Florida, Gainesville.

Michigan: Ann Arbor and Detroit, May 9-10. Sec., Miss Eloise Lebeau, 101 N. Walnut St., Lansing.

Nebraska: Omaha, May 6-7. Dir., Bureau of Examining Boards, State Department of Health, Mr. O. F. Humble, 1009 State Capitol Bldg., Lincoln 9.

New Mexico: *Examination.* Santa Fe, May 4. Sec., Miss Marion M. Rhea, 114 E. Marcy St., Santa Fe.

Oregon: June 7. Final date for filing application is May 21. Sec., Mr. C. D. Byrne, University of Oregon, Eugene.

Rhode Island: *Examination.* Providence, May 14. Chief, Division of Professional Regulation, Mr. Thomas B. Casey, 366 State Office Bldg., Providence.

South Dakota: Vermillion, June 6-7. Sec., Dr. G. M. Evans, 310 E. 15th St., Yankton.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Malpractice: Substantial Compliance With Statute of Limitations Not Sufficient.—The plaintiff filed a suit for damages allegedly caused by the malpractice of the defendant physician. From a judgment for the defendant, the plaintiff appealed to the Supreme Court of Wisconsin.

Section 330.19 of the Wisconsin statutes provides that "no action to recover damages for an injury to the person shall be maintained unless, within two years after the happening of the event causing such damages, notice in writing, signed by the party damaged, his agent or attorney, shall be served upon the person or corporation by whom it is claimed such damage was caused, stating the time and place where such damage occurred, a brief description of the injuries, the manner in which they were received and the grounds upon which claim is made and that satisfaction thereof is claimed of such person or corporation. . . ." The plaintiff's complaint was served on the defendant on Nov. 29, 1941 and it was based on alleged negligence of the defendant in his treatment of the plaintiff between June 16 and Aug. 15, 1939. This was clearly not within the required two years.

The plaintiff contended that the intent of the statute is that a defendant must be given a notice to afford an opportunity to investigate the circumstances before they become stale and to preserve evidence for his defense; he argued that a substantial compliance with such intent was sufficient and that it was not necessary to observe literally the formal statutory requirements. He then cited two steps which he claimed constituted a sufficient compliance of the statute: 1. On April 2, 1940 his attorney wrote a letter to the defendant in which he stated that he had been retained by the plaintiff "relative to the institution of a malpractice action as the result of your treatment of Mr. Beyer's fractured toe. Kindly refer this matter to your insurance carrier or contact the undersigned immediately upon receipt of this letter." 2. His attorney subsequently served on the defendant an affidavit and notice for an adverse examination. At the examination the defendant testified that the plaintiff came to his office June 16, 1939 and that the next day, after an x-ray was made of the injuries, he set the bone in plaintiff's foot and prepared the cast at the plaintiff's home.

The Supreme Court said that, in view of the express and positive provision in section 330.19 of the statutes, "No action to recover damages for an injury to the person shall be maintained unless" the injured party shall give the prescribed notice of injury or serve his complaint within two years after the event which caused such injury. The required service of such notice or a complaint is a condition precedent to the right to maintain such action. Consequently a mere substantial compliance is not sufficient. The court therefore concluded that the matters relied on by the plaintiff were not sufficient to constitute compliance with the positive requirements of the statute, that there must be stated in the required notice the time and place where the damage occurred and that satisfaction thereof is claimed of the defendant, and finally that the notice must be given in the matter required for the service of a summons in a court of records. Accordingly the trial court's judgment in favor of the defendant was affirmed.—*Beyer v. Seymer, 24 N. W. (2d) 616 (Wisconsin, 1946).*

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1937 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied with stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American J. Digestive Diseases, Fort Wayne, Ind.

14:1-46 (Jan.) 1947

*Chronic Peptic Ulcer in 94 Diabetics. M. N. Wood.—p. 1.
*Colloidal Aluminum Hydroxide Gel and Magnesium Hydroxide in Management of Peptic Ulcers. I. R. Jankelson.—p. 11.
Regional Colitis Involving Descending Colon and Sigmoid. H. J. Epstein, B. Lipshutz and M. Steinbach.—p. 13.
Vitamins and Hormones in Nutrition: III. Infection. B. F. Sieve.—p. 16.
Diagnosis of Diseases of Pancreas. R. Ehrmann.—p. 24.
Pathogenesis of Acute Infectious Hepatitis. J. I. Goodman.—p. 26.
Review of Disturbances of Fat Absorption and Fat Digestion. M. M. Kirschen and B. J. Weinberg.—p. 30.

Chronic Peptic Ulcer in Patients with Diabetes.—Wood says that among 12,000 diabetic patients observed at the George F. Baker Clinic 94 had peptic ulcer. Treatment was primarily directed toward the management of the ulcer, control of the hyperglycemia and glycosuria with insulin. The diabetes in the majority of cases was mild, thus making the problem much simpler. Even in the more severe cases of diabetes, however, a program so directed has been quite satisfactory. It is necessary to provide a well balanced diet of carbohydrates, fat and protein suitable to the diabetic state, but any type of diet required for the management of an ulcer at any stage can be calculated so that it will be a good one for both diseases and at the same time provide all the calories necessary. A table gives four such diets. Standardization should be avoided; every diet should be figured according to the specific requirements of each individual, taking into consideration his metabolism, type of work and present weight. Additional vitamins should supplement each diet. A diabetic patient temporarily out of control may at first require large doses of insulin. After a period of vigorous treatment the insulin dose necessary for adequate control will usually drop and remain fairly constant at a much lower level.

Colloidal Aluminum Hydroxide Gel and Magnesium Hydroxide in Peptic Ulcer.—Jankelson says that colloidal aluminum hydroxide gel and magnesium hydroxide combination is an effective stable buffer which acts in the stomach for several hours. With this combination ulcer pain and heartburn may be controlled with smaller and less frequent doses than are required with the colloidal aluminum hydroxide gel alone. It can be continued for long periods without the danger of an acid rebound, alkalosis or aggravation of constipation.

American Journal of Diseases of Children, Chicago

73:1-138 (Jan.) 1947

*Eczema and Essential Fatty Acids. A. E. Hansen, Elizabeth M. Knott, Hilda F. Wiese and others.—p. 1.
Substitution Transfusion: New Treatment for Severe Erythroblastosis Fetalis. H. Wallerstein.—p. 19.
Chronic Eosinophilia: Report of Case with Necrosis of Liver, Pulmonary Infiltrations, Anemia and Ascaris Infestation. Josephine G. Perlingiero and P. György.—p. 34.
Tertian, Quartan and Mixed Malarial Infections: Survey of 334 Cases of Infection with Plasmodium Vivax, 10 Cases of Infection with Plasmodium Malariae and 8 Cases of Mixed Malarial Infections in Children. N. H. Einhorn.—p. 55.

Eczema and Essential Fatty Acids.—Hansen and his co-workers made clinical and blood lipid studies on 225 patients with eczema and 101 control subjects in order to detect evidence of a possible relationship between a disturbance in essential fatty acid metabolism and the occurrence of eczema. Serum lipid studies on many of the eczematous patients disclosed that more than three fourths of the infants and children and more than half of the adults had iodine numbers for the serum fatty acids below the mean values for the control subjects. When used as the sole form of therapy of 148 eczematous patients of various ages, addition to the diet of fats rich in unsaturated fatty acids, such as lard and certain vegetable oils, produced a favorable clinical response in the majority of the patients. The specific role of the essential fatty acids appears to be that of restoring and maintaining normal nutrition of the skin. The routine inclusion of unsaturated fatty acids in the diet, while known allergens and other irritants of the skin were avoided, was found to afford the best protection against recurrent attacks of eczema, particularly infants and young children. The use of unsaturated fatty acid containing soy bean preparations as milk substitutes appears to be beneficial to a degree greater than would be anticipated on the basis of relief from sensitivity to the milk proteins alone. Sensitivity to wheat gradually may be reduced after the addition of lard to the diet.

American Journal of Ophthalmology, Cincinnati

30:1-126 (Jan.) 1947

Proliferation of Epithelium of Lens. B. Samuels.—p. 1.
Glaucoma Capsulare. H. S. Gradle and H. S. Sugar.—p. 12.
Eserine: Its History in Practice of Ophthalmology: (Physostigmine: Physostigma Venenosum Balfour: Calabar Bean). F. H. Rodin.—p. 19.
Evaluation of Newer Therapeutic Agents in Ophthalmology. E. A. Vorisek.—p. 29.
Influence of Penicillin on Course of Ocular Lesions Due to Toxic Agent. I. H. Leopold and W. O. LaMotte Jr.—p. 41.
Regarding Goniophotography. R. Rodriguez Barrios and R. Vazquez Barrierre.—p. 49.

American Journal of Surgery, New York

73:1-140 (Jan.) 1947

*War Wounds of Ventricles of Brain. W. R. Pitts.—p. 3.
Experiences in Treatment of Traumatic Cavitation in Upper Tibia. H. C. Fett, J. J. O'Connor and J. A. Johnson.—p. 11.
Practical Maneuvers in Abdominal Surgery. D. Guthrie and G. Clare Bishop.—p. 22.
Cicatrizing Enterocolitis. G. H. Pratt and L. K. Ferguson.—p. 28.
*Chlorophyll in Wound Healing and Suppurative Disease. W. F. Bowers.—p. 37.
Surgical Objectives of Anorectal Repair: Anatomic Factors in Patholysis and Drainage of Anal Infections. C. Eaton.—p. 51.
*Combined Penicillin and Sulfonamide Treatment of Peritonitis. Merle J. Brown.—p. 56.
Laryngeal Complications After Thyroid Operation: Symptoms, Prognosis and Treatment. A. F. Laszlo.—p. 62.
Fate of Ureteral Stump After Nephrectomy. F. L. Senger, A. L. Loomis Bell, H. L. Warres and W. S. Tirman.—p. 69.
Traumatic Lipohemarthrosis: Layering of Fat and Blood in Joint. H. R. Senturia and H. E. Simon.—p. 79.
Convulsions Occurring Under Anesthesia: Analysis of 6 Cases. H. T. Wikle and R. J. Ryan.—p. 83.
Classic Herniorrhaphies of Bassini, Halsted and Ferguson. J. E. Summers.—p. 87.
Traction Loop. D. L. Borden.—p. 100.
Misuse of Adrenalin and Coramine: Altered Drug Effects During Anesthesia. C. L. Burstein.—p. 102.

War Wounds of Ventricles of Brain.—Pitts says that the high fatality rate of wounds of the ventricles during the first world war was ascribed to the lack of a barrier against infection. This report deals with penetrating wounds of the cerebral ventricular system as seen and treated in an evacuation hospital. Among 108 wounds of the brain there were 16 with involvement of the ventricles. These 16 are divided into two groups, one of which includes the patients who were admitted to the hospital with signs of impending death and had short survival periods. The second group is composed of 13 operative cases with two fatalities. The operative mortality for penetrating wounds of the ventricles is two and one-half times that for penetrating wounds of the brain without ventricular involvement. Intracranial infection was not a factor in any of the deaths. Bilateral and bipolar ventricular wounds usually lead to an early fatal termination.

Chlorophyll in Wound Healing and Suppurative Disease.—Bowers records his own observations as well as those of a group of over thirty officers of the surgical service of the staff of the Winter General Hospital obtained with water soluble chlorophyll in the treatment of clean and infected wounds. The report covers more than 400 cases, representing a variety of surgical conditions. Use of chlorophyll was followd by rapid disappearance of objectionable odors and remarkable cleanliness of the wound within two or three days. Granulation tissue seemed to be of finer texture and firmer and to form more rapidly. Epithelization also appeared to be stimulated more by chlorophyll than by penicillin. No skin irritation or adverse systemic reactions have been noted, and the chlorophyll wet dressing has been much more comfortable than dressings with saline solution, boric solution or penicillin. If chlorophyll is used as a wet dressing over a week there is a tendency to overproduction of granulation tissue, so that after the wound is clean and odorless it is advocated that chlorophyll ointment gauze be used instead of the wet dressing. Chlorophyll caused cessation of pus formation in two or three days in osteomyelitis and thoracic empyema cases. In the nose and sinus cases chlorophyll had a quicker effect in stopping purulent drainage than other agents. Physicians and patients noted the bland qualities of chlorophyll even when instilled in the eye, the nose, deep intra-abdominal abscess cavities and the pleural cavity. Chlorophyll is not antibacterial and is only weakly bacteriostatic, so that its beneficial effect is exerted through stimulation of the cells of the host.

Combined Penicillin and Sulfonamide Treatment of Peritonitis.—Brown combined sulfonamides and penicillin intraperitoneally and parenterally in patients with perforated gangrenous appendicitis with peritoneal soiling and peritonitis. The author has operated on and treated by combined chemotherapy 7 patients with acute gangrenous perforated appendicitis with diffuse peritonitis. There were no deaths, and the hospital morbidity rate averaged twelve to eighteen days. Brown concludes that the combined use of sulfonamides and penicillin is justified by the increased rate of recovery and decreased secondary complications of appendical peritonitis.

Am. J. Syphilis, Gonorrhea and Ven. Dis., St. Louis

31:1-100 (Jan.) 1947

*Penicillin Therapy in Neurosyphilis. H. Koteen, E. J. Doty, B. Webster and W. McDermott.—p. 1.

Comparison of the In Vitro Antigonococcal Actions of Penicillins G, F, K and X. E. Ellen Nell and Justina H. Hill.—p. 14.

Streptomycin in Experimental Chancroid. F. Mortara and Margaret T. Saito.—p. 20.

Rapid Treatment of Syphilis: Comparison of Results Using Five Treatment Methods. H. M. Leavitt.—p. 27.

Penicillin Therapy of Early Syphilis. H. L. Holley.—p. 41.

Treatment of Early Syphilis with 600,000 Units of Penicillin in Seven and One-Half Days. T. J. Bauer, H. N. Bundesen, R. M. Craig, G. X. Schwemlein and R. L. Barton.—p. 45.

Rapid Treatment of Prenatal Syphilis. S. Olansky and R. Beck.—p. 51.

Use of Pyribenzamine Hydrochloride in Controlling Urticaria Due to Penicillin. R. H. Kampmeier.—p. 57.

Cutaneous Infection with Neisseria Gonorrheae, with Development of Lymphangitis Resulting from Laboratory Accident. H. J. Sears.—p. 60.

Evaluation of Ducrey Skin Test for Chancroid. R. B. Dienst and S. W. Gilkerson.—p. 65.

Diagnostic Tests in Differential Diagnosis of Anogenital Lesions. H. Packer and Anna Dean Dulaney.—p. 69.

Effect of Sulfonamide Therapy on Persistence of Virus of Lymphogranuloma Venereum in Buboes. A. Heyman, Margaret J. Wall and P. B. Beeson.—p. 81.

Penicillin in Neurosyphilis.—This report by Koteen and his associates is based on observations of the effects of penicillin therapy in 111 patients with neurosyphilis treated in the medical service of the New York Hospital. All the patients have been followed for at least twelve months after the cessation of treatment. Six of 11 patients with dementia paralytica attained remissions of their disease. Four of the 5 patients who failed to show significant improvement were badly deteriorated prior to therapy. There was a great change in the cerebrospinal fluid abnormalities not only in those paretic patients who showed clinical improvement but also in some who failed to improve clinically. Forty-one patients with tabes dorsalis complained of a total of fifty-seven symptoms. There was subjective improvement in thirty-three of the fifty-seven symptoms after penicillin therapy. No striking improvement was observed in the objective manifestations of tabes dorsalis. In isolated examples of various clinical forms of meningovascular syphilis the therapeutic results after penicillin were comparable to those usually observed after arsenotherapy. The authors conclude that the administration of penicillin for a two week period produces a striking effect on the cerebrospinal fluid abnormalities and certain of the clinical manifestations of late neurosyphilis. It is believed that the penicillin therapy of neurosyphilis (exclusive of primary optic atrophy) approaches and may equal fever therapy in effectiveness.

Annals of Surgery, Philadelphia

125:1-128 (Jan.) 1947

Expeditious Care of Full Thickness Burn Wounds by Surgical Excision and Grafting. O. Cope, J. L. Langohr, F. D. Moore and R. C. Webster Jr.—p. 1.

Esophageal Atresia and Tracheoesophageal Fistula. W. E. Ladd and O. Swenson.—p. 23.

Pulsion Diverticulum of Pharyngoesophageal Junction: Technic of One Stage Operation; Preliminary Report. R. H. Sweet.—p. 41.

*Anatomic Data Regarding Surgical Treatment of Angina Pectoris. G. Saccomanno, R. A. Utterback and R. M. Klemme.—p. 49.

Ten Year Survey of Intestinal Obstruction. E. L. Eliason and R. F. Welty.—p. 57.

*Traumatic Pancreatitis. T. A. Shallow and F. B. Wagner Jr.—p. 66.

Surgical Treatment of 1,545 Herniae. F. Glenn.—p. 72.

*Scalenotomy: Analysis of 11 Cases Done for Scalenus Anticus Syndrome. J. F. Tanna.—p. 80.

Experiences with Posttraumatic Osteomyelitis in World War II. W. M. Weeden, G. McNeer, H. D. Stein and J. C. Long.—p. 89.

Bone Grafting Methods: Two Illustrative Case Reports. P. C. Colonna.—p. 96.

Experimental Observations on Absorbable Alginate Products in Surgery: Gel, Film, Gauze and Foam. G. Blaine.—p. 102.

Nutritional Rehabilitation of Surgical Patients. J. H. Remington, J. A. Bargen and J. DeJ. Pemberton.—p. 115.

Technic for Testing Hypertensive Patients Preoperatively. J. L. Southworth and H. I. Russek.—p. 119.

Surgical Treatment of Angina Pectoris.—Saccomanno and his associates determined on dogs that stimulation of isolated spinal nerves produced cardiac acceleration and a rise in systemic blood pressure when the second through the sixth thoracic spinal nerves were stimulated. No change in heart rate or blood pressure was observed when the eighth cervical or first thoracic spinal nerves were stimulated, indicating that these segments do not convey cardiac efferent fibers. The effect on pulse rate was greatest in the second and third thoracic nerves, with diminishing effect in the fourth and fifth and very slight effect below the fifth thoracic nerve. The effect on systemic blood pressure was more or less constant from the second thoracic down to the seventh thoracic nerve. By means of surgical removal or alcohol injection of the second, third and fourth thoracic sympathetic ganglions on the affected side a complete alleviation of anginal pain and a reduction of coronary vasospasm should result.

Traumatic Pancreatitis.—Shallow and Wagner say that within the past four years 28 cases of acute pancreatitis have been encountered in the Jefferson Medical College Hospital, 20 of the edematous type and 8 of the hemorrhagic type. A conservative nonoperative treatment was generally employed, operation being reserved for the complications. One case is unique in that it followed a nonpenetrating upper abdominal injury. Sustained extremely high serum amylase values were observed and recovery took place without complications following conservative therapy. Trauma accounts for approximately 2 to 4 per cent of cases of acute pancreatitis. Following an upper abdominal injury, acute pancreatitis should always be suspected. Suspicion of traumatic pancreatitis should be confirmed by the serum amylase test. Nonoperative management, which has greatly reduced the mortality in the usual types of pancreatitis, is advocated for cases following nonpenetrating abdominal injury, if serious injury to other organs and massive hemorrhage can be ruled out.

Scalenotomy for Scalenus Anticus Syndrome.—Tanna states that the symptoms of scalenus anticus syndrome are the result of spasm of the scalenus anticus muscle resulting in compression of the brachial plexus and subclavian artery, with the creation of a vicious circle. Pain may be experienced in the shoulder, arm, forearm or even extending into the hand. The pain sometimes extends to the cervical spine, to the scapula and to the thoracic wall. The pain may be of the acute, lancinating type or dull or aching. Sympathetic nervous involvement is manifested by vasomotor spasm, lack of capillary action in the fingers and reduction of temperature, which frequently simulates Raynaud's disease. Conditions from which it must be differentiated are cervical rib, cervicodorsal sympathalgia, Raynaud's disease, subacromial bursitis, supraspinatus tendon rupture and brachial neuritis. The author reviews 11 consecutive cases of scalenus anticus syndrome for which scalenotomy was done. The results have been excellent. Seven of these cases were not associated with a cervical or abnormal rib, indicating that the scalenus anticus syndrome occurs with much greater frequency than the cervical rib syndrome. Scalenotomy may not be necessary in mild cases.

Archives of Pathology, Chicago

42:557-666 (Dec.) 1946

Pathologic Changes in Gouty Arthritis. Mary S. Sherman.—p. 557

Brain Repair: I. Phospholipid-Splitting Enzymes of Brain Phagocytes. S. P. Hicks.—p. 564.

Renal Intratubular Syncytial Masses: Note on Their Origin. Elizabeth Lowenhaupt.—p. 572.

Myocardial Granulomas in Subacute Bacterial Endocarditis. O. Saphir. —p. 574.

Organized Emboli of Tertiary Pulmonary Arteries: Unusual Causes of Cor Pulmonale. B. Castleman and E. F. Bland.—p. 581.

Absence of Left Cardiac Ventricle with Aplasia of Aortic Orifice and Hypoplasia of Aorta. M. A. Hyman.—p. 590.

*In Vitro Effect of Penicillin on Endameba Histolytica. Elta W. Knoll and Katharine M. Howell.—p. 594.

Some Effects of Prolonged Massive Estrogen Treatment on the Rat, with Special Reference to Thymus. J. C. Plagge.—p. 598.

Medial Calcification of Arteries of Infants. Miriam H. Field.—p. 607.

*Pathologic Changes Resulting from Administration of Streptomycin. C. W. Mushett and H. S. Martland.—p. 619.

Penicillin and Endameba Histolytica.—Knoll and Howell observed in in vitro studies that penicillin had little or no effect on cultures of Endameba histolytica, either the trophozoites or the cysts. By inference it seems probable that the improvement observed in the clinical symptoms of patients with amebiasis under penicillin therapy must be due to the action of the drug on the secondary bacterial invaders of the tissues.

Pathologic Changes Resulting from Streptomycin.—Mushett and Martland found that the parenteral administration of highly purified as well as average streptomycin samples resulted in fatty metamorphosis of the liver in monkeys and dogs. Large doses of streptomycin concentrates produced small foci of necrosis in the livers of dogs. Fatty metamorphosis was observed less often in the kidneys, but albuminous detritus appeared in the subcapsular spaces and the tubules of the kidney in some of the monkeys. Hyaline and granular casts, epithelial cells and occasionally blood cells were seen in the sediment of the centrifuged urine of dogs receiving large doses of streptomycin concentrates. Focal tubular necrosis occurred in the kidneys of 1 dog. The fatty change observed in the liver and the kidney was found to be reversible. Slight normocytic anemia also disappeared on cessation of dosage. Prolonged administration of streptomycin concentrates of average purity resulted in neurotoxic effects in dogs, but streptomycin samples of higher potency did not produce neurotoxic symptoms in dogs.

Archives of Physical Medicine, Chicago

27:729-782 (Dec.) 1946

Manipulation. M. Smart.—p. 730.

Physical Medicine in Treatment of Rheumatic Disorders: Impression from War Years. F. Bach.—p. 734.

Medical Aspects of Rehabilitation. T. M. Ling.—p. 738.

Implications of Hydrotherapy. M. B. Ray.—p. 742.

*Problems of Physical Therapy for Persons with Traumatic Paraplegia. L. Guttmann.—p. 750.

Physical Therapy in Traumatic Paraplegia.—Guttmann gives an account of methods of physical readjustment practiced in a center caring for over 160 patients with spinal injuries. Physical therapy in paraplegic patients has two aims: (1) prevention of contractures and atrophy in the paralyzed part of the body and (2) adaptation therapy of normal parts of the body. The significance of the overdevelopment of muscles which can compensate for the loss of the paralyzed muscles is discussed. Swinging, dressing and balancing exercises have proved invaluable in the mobilization of compensatory mechanisms for the postural adaptation of paraplegic patients. Games, especially wheelchair polo, play an essential part in the physical restoration of persons with traumatic paraplegia.

Bulletin of Johns Hopkins Hospital, Baltimore

79:365-484 (Dec.) 1946

Report on Epidemic of Mild Lymphocytic Meningitis in Burma. F. W. Kibbe and W. G. Beadenkopf.—p. 365.

*Studies on Schistosomiasis Japonica: 2. Analysis of 364 Cases of Acute Schistosomiasis, with Report of Results of Treatment with Fuadin in 184 Cases. W. L. Winkenwerder, A. V. Hunninen, T. Harrison and others.—p. 406.

Problem of Identification of Oral Spirochetes and Description of Precipitin Test for Their Serologic Differentiation. L. B. Robinson and Ruth H. Wichelhausen.—p. 436.

Control of Experimental Pneumonia with Penicillin: II. Comparison of Intramuscular, Respiratory and Oral Routes of Administration with Respect to Therapeutic Activity and Rate of Absorption. Catherine E. Wilson, Carolyn W. Hammond, Ann F. Byrne and Eleanor A. Bliss.—p. 451.

Schistosomiasis Japonica.—Winkenwerder and his associates review the observations made on 364 cases in the epidemic of schistosomiasis japonica which began soon after the reoccupation of Leyte in October 1944. The first patients developed symptoms one month after the landing on the island. The outbreak reached its peak in January, then gradually subsided, and came to an end in May. In the pretreatment stool examination, mature ova were found in 344 cases. Only immature ova were found in 16 cases, in which after treatment had been instituted mature ova were found. All patients were treated with an antimony compound: fuadin, antimony and potassium tartrate (tarter emetic) or anthiomaline. Only the results obtained in the treatment of 210 patients given a total dose of 40 cc. of fuadin are reported in detail. Ova disappear from the stools usually between the tenth and sixteenth days of treatment with fuadin. The viability of the eggs appears to be unaffected by fuadin, and their disappearance from the stools is probably attributable to the effect of the drug on ovulation in the female worm. The symptoms of acute schistosomiasis subside at approximately the same time at which the eggs disappear from the stools. Following one course of 40 cc. of fuadin relapses have been encountered in approximately 40 per cent of the cases. In only 4 of 55 relapses were symptoms of schistosomiasis noted. In all other cases the relapse was characterized solely by the reappearance of ova in the stools. The tendency to relapse appears to be related to the severity of the initial illness. Relapses are more likely to occur in those who have a persistent eosinophilia following the first course of treatment. The finding of intestinal nodules on sigmoidoscopy may be helpful in detecting a relapse; they occur in the absence of ova in the stools. Only 2 of the patients exhibited mild toxic effects during treatment with fuadin. Doses up to a total of 80 cc. in a single course have been administered without serious toxic effects. The therapeutic effect of these larger doses cannot be analyzed until a later date.

Canadian Medical Association Journal, Montreal

56:1-128 (Jan.) 1947

Present Status of Antibiotics in Therapy. J. A. Dauphinee.—p. 1.

*Laryngotracheobronchitis: Statistical Review of 549 Cases. E. A. Morgan and D. E. S. Wishart.—p. 8.

"Shock Therapies" at Ontario Hospital, London. J. J. Geoghegan.—p. 15.

Seborrheic Dermatitis. I. Price.—p. 25.

Safety Measures in Practice of Anesthetics. B. C. Leech.—p. 28.

Industrial Health Problems Encountered in the War. J. G. Cunningham.—p. 34.

Chronic Problems in Industrial Surgery. W. N. Kemp.—p. 41.

Rh Factor and Erythroblastosis. C. E. Snelling.—p. 47.

Estimation of Liver Function. H. K. Detweiler.—p. 51.

*Circumcision and Venereal Disease. R. A. Wilson.—p. 54.

Small Tumors of Skin. H. A. MacKechnie.—p. 56.

Nutrition in Surgery. H. R. Robertson and D. W. Smaill.—p. 59.

Kuntscher Method of Intramedullary Pin Fixation. R. K. Magee.—p. 65.

Laryngotracheobronchitis.—Morgan and Wishart discuss the disease which in the last decade has been termed, almost universally, laryngotracheobronchitis. The term is at best a diagnosis of convenience to describe cases presenting the same initial clinical picture. An analysis was undertaken of 549 cases. The series does not include cases of laryngeal diphtheria, but it does include cases of spasmodic croup. Sixty-nine per cent of the cases occurred under the age of 2 years and only 5 per cent over 6 years. The bacteria isolated were Streptococcus hemolyticus, Staphylococcus aureus and the pneumococcus. Hemophilus influenzae was infrequently found. Many infections were due to a virus. These were recognized by the lack of response to antibiotic drugs, failure to demonstrate pathogenic bacteria in the cultures, a normal leukocyte count or a leukopenia and a fairly typical clinical course. Antibiotic drugs are of value in prophylaxis and should be exhibited in every case of simple spasmodic croup. Tracheotomy should be performed early, but subsequent bronchoscopic suction must be frequently resorted to. Intubation cannot be recommended. The postoperative management requires experienced nurses and the constant attendance of a trained bronchoscopist. The principal causes of death are failure to relieve obstruction, overwhelming toxemia, postoperative infection, pneumothorax and mediastinal emphysema. Most deaths were in children under 4 years of age. Hyperpyrexia is a serious prognostic sign. The mortality rate has been gradually reduced in the last twenty years.

Circumcision and Venereal Disease.—Wilson collected information regarding previous circumcision on 1,304 consecutive patients at a Canadian army venereal disease treatment center. One thousand recruits at an army reception center were examined to determine the incidence of circumcision among Canadian army personnel. The figures obtained show that 76.7 per cent of the venereal disease group were uncircumcised, whereas in the control group 52 per cent were uncircumcised. The most striking difference is in syphilis, in which 90 per cent of the patients were uncircumcised. It is considered unlikely that the uncircumcised are significantly more promiscuous. Discussing the possible causes of the higher incidence of venereal disease in the uncircumcised, the author says that in gonorrhea it could be due to the fact that the foreskin, after coitus, retains infectious mucus. Here is an ideal environment of moisture and warmth, the organisms multiply and provide heavy contamination of the adjacent urethral mucosa. That syphilis is more common in uncircumcised soldiers seems even more reasonable, since tears and abrasions of the foreskin provide a port of entry for the spirochete.

Georgia Medical Association Journal, Atlanta

36:1-52 (Jan.) 1947

Hyperparathyroidism. C. J. McLoughlin.—p. 1.
Blood Sedimentation Test as Aid in Diagnosis. C. P. Roberts.—p. 4.
Rh Factor in Blood Typing. A. J. Ayers.—p. 6.
Rh Factor in Infancy and Childhood. R. C. McGahee.—p. 8.
Digression on Sexual Hair. R. B. Greenblatt.—p. 13.
Recognition and Management of Early Psychosomatic Disorders. R. S. Leadingham.—p. 19.
Medical Education and Medical Care in Georgia—Past, Present, Proposed.—G. L. Kelly.—p. 23.
Complications of Antirabic Treatment. T. F. Sellers.—p. 30.
Peroral Endoscopy: Six Year Report. W. L. Barton.—p. 35.
Experiences with Malaria on a Pacific Island. C. D. Fowler.—p. 38.

Journal of Immunology, Baltimore

54:325-404 (Dec.) 1946

*Circulating Antitoxin at Onset of Diphtheria in 425 Patients. J. Ipsen.—p. 325.
Nutrition and Resistance to Infection: Bactericidal Properties and Phagocytic Activity of Peritoneal Fluid of Rats in Various States of Nutritional Deficiency. K. Guggenheim and Edith Buechler.—p. 349.
Studies on Chick Embryo Vaccines Against Japanese B Encephalitis. H. Koprowski and H. R. Cox.—p. 357.
Virus of Ilhéus Encephalitis: Physical Properties, Pathogenicity and Cultivation. H. Koprowski and T. P. Hughes.—p. 371.
Occurrence of Nonspecific Virus-Neutralizing Properties in Serums of Some Neotropic Mammals. H. Koprowski.—p. 387.

Circulating Antitoxin in Diphtheria.—Ipsen determined the antitoxin titer of 425 patients with laryngeal diphtheria. Of these 287 were unvaccinated, 32 vaccinated once and 106 vaccinated with more than one injection. In the vaccinated the course of the disease was distinctly milder than that of the unvaccinated, while the antitoxin titer was much higher for the former than for the latter. When the unvaccinated are divided into groups according to the severity of the disease there is only a slight difference in the antitoxin titers of the groups. When all the cases are grouped according to the antitoxin titer there is a scarcely demonstrable difference in the course of the disease for groups with a high titer and those with a low titer. Comparison of antitoxin titers in patients having diphtheria with those in the rest of the population revealed fewer with a titer higher than 0.1 antitoxin unit among patients with diphtheria. In further statistical studies the author found a single quantity as an indicator for the course of the disease for each patient. The average course of each group can then be computed as the mean of the course of the individual cases. This provides greater statistical certainty than an analysis of the percentage of complications.

Journal of Infectious Diseases, Chicago

79:199-290 (Nov.-Dec.) 1946

Action of Streptothricin and Other Antibiotic Agents on Blastomyces Dermatitidis Infections of Chick Embryo. Esther Meyer and Z. J. Ordal.—p. 199.
Studies on Metabolism of Streptococcus Pyogenes: I. Oxygen Consumption in Presence of Glucose and Certain Additional Substances. G. W. Waring Jr. and L. Weinstein.—p. 205.
Effect of Splenectomy on Avian Malarial Infections. L. A. Terzian.—p. 215.
Immunologic Relationships Among Polysaccharides from Various Infectious Organisms. J. Oliver-González.—p. 221.
Illness in Man Following Inhalation of Serratia Marcescens. T. F. Paine.—p. 226.
Respiratory Pathogenicity of Bacillus Anthracis Spores: I. Methods of Study and Observations on Pathogenesis. G. A. Young Jr., M. R. Zelle and R. E. Lincoln.—p. 233.
Id.: II. Genetic Variation in Respiratory Pathogenicity and Invasiveness of Colonial Variants of B. Anthracis. M. R. Zelle, R. E. Lincoln and G. A. Young Jr.—p. 247.
Id.: III. Changes in Pathogenicity Due to Nutritional Modifications. R. E. Lincoln, M. R. Zelle, C. I. Randles, J. L. Roberts and G. A. Young Jr.—p. 254.
Id.: IV. Chemical-Biological Synergisms. G. A. Young Jr. and M. R. Zelle.—p. 266.
Effect of Vitamin A Deficiency on Plasmodium Lophurae Infection in Ducks. R. H. Rigedon.—p. 272.
Studies on Cultivation of Japanese B Encephalitis Virus in Eggs. H. R. Morgan, R. L. Early and Mary E. McClain.—p. 278.
Effects of Atabrine on Saurian Malarial Parasite, Plasmodium Floridense. P. E. Thompson.—p. 282.

Journal of Urology, Baltimore

56:515-612 (Nov.) 1946

Giant Hydronephrosis as Cause of Pyonephrosis in Opposite Kidney: Report of Case. R. R. Zimet and L. Kappel.—p. 515.
Wilms Tumor in Horseshoe Kidney. E. J. McGinn and J. M. Wickham.—p. 520.
Postcaval Ureter: Report of Surgical Case. M. H. Nourse and H. C. Moody.—p. 525.
Hypoplasia of Ureter with Renal Agenesis. J. L. Hamilton.—p. 530.
Acute Interstitial Cystitis: Clinical Entity. C. Tahara, C. Lechner and E. Hess.—p. 535.
Priapism Complicating Sickle Cell Anemia: Case Report. J. Rosokoff and E. L. Brodie.—p. 544.
Actinomycosis of Testicle. W. J. Baker and A. B. Ragins.—p. 547.
*Mumps Orchitis: Surgical Treatment. N. Nixon and D. B. Lewis.—p. 554.
Late Effects of Battle Wounds in Genitourinary Tract. L. E. Hawes.—p. 561.
Study of 50 Cases of Enuresis. A. D. Vogelsang.—p. 584.
*Grain Mite Infestation of Urinary Tract: Report of 3 Cases. A. M. Crance.—p. 588.
Oral Penicillin in Treatment of Neisserian Infections. L. D. Seager, W. G. Shoemaker, S. Mulholland, Ruth E. Miller, G. R. Wells and Kathryn B. Barnes.—p. 594.
Sulfathiazole Anuria with Recovery Following Renal Decapsulation. A. H. Kleiman.—p. 598.
Advantages of Cotton as Suture Material in Urologic Surgery. W. F. Melick.—p. 602.
Proved Ineffectiveness of Compression Bag in Intravenous Pyelography. H. E. Carlson.—p. 609.

Mumps Orchitis.—Nixon and Lewis say that 101 of 339 soldiers with mumps developed orchitis. In 68 the orchitis was of sufficient severity to warrant operation. Early surgical treatment of mumps orchitis is of value in promptly relieving pain, nausea, vomiting, backache and fever, shortening the period of disability and preventing subsequent atrophy of the involved testis. Without operation the acute symptoms of mumps orchitis will disappear more gradually, requiring three to four additional days of hospitalization, and testicular atrophy will result in 40 to 60 per cent. Observations in this series suggest that the atrophy is not caused alone by the inflammation of the parenchyma and the resistance offered by the firm tunica albuginea but that the tunica vaginalis also is involved in the development of increased pressure with resulting necrosis. It is believed that early drainage of the hydrocele fluid is necessary to avoid subsequent atrophy of the testis and that early incision of the tunica vaginalis is sufficient to insure optimum results.

Grain Mite Infestation of Urinary Tract.—Crance presents 3 cases of grain mite infestation of the bladder. Entry probably occurs as the result of direct contact of infected fecal material with the urethra. However, in the male this is hardly possible, and it has been suggested that the eggs may reach the bladder through the kidney and ureters and hatch the mite after implanting themselves on the bladder wall. The fact that, according to the meager literature, infestation with the mite is about as frequent in males as in females is more or less against the direct contamination theory but rather in favor of the theory that the eggs proceed through the intestinal tract, thence to the kidney and downward into the bladder. In the reported cases favorable therapeutic results were obtained with bladder irrigations followed by instillations of mild protein silver.

Medical Annals of District of Columbia, Washington

16:1-56 (Jan.) 1947

Can We Win the Peace Through Science? A. H. Waitt.—p. 1.
Experience with Series of 450 Cases of Pilonidal Disease at Naval Hospital. V. T. Young.—p. 6.
Migraine Headache: Treatment of 51 Patients with Dihydroergotamine. L. S. Blumenthal and Barbara Fakler.—p. 10.
Treatment of Gonorrhea with Streptomycin: Preliminary Report with Cure of Four Cases. L. E. Putnam, R. P. Herwick, S. R. Taggart and B. D. Chinn.—p. 14.
Role of Pediatrician in Poliomyelitis. J. S. Wall.—p. 15.

Military Surgeon, Washington, D. C.

100:1-104 (Jan.) 1946. **Partial Index**

Active Immunization Against Malaria: (Wellcome Prize Essay, 1946). C. J. Wildman.—p. 1.
Early Nerve Suture. A. Ecker.—p. 14.
Are Doctors Educated? A Plea for More Correct Pronunciation of Medical Terms. A. R. Koontz.—p. 35.
Medical Service at Bastogne. C. S. Phalen.—p. 37.
Orientation to Psychosomatics. H. A. Davidson.—p. 47.
Statistical Follow-Up of Effectiveness of Treatment of Combat-Induced Psychiatric Casualties: I. Returns to Full Combat Duty. A. O. Ludwig and S. W. Ransom.—p. 51.
The Borderline and Mentally Defective Prison Inmate. H. R. Lipton. —p. 62.
Clinical Note on Electrocardiography Under Hypnosis. J. M. Schneck. —p. 65.
Problems Related to Venous System of Lower Extremities Among Army Personnel. L. K. Stalker.—p. 66.

Minnesota Medicine, St. Paul

29:1185-1294 (Dec.) 1946

Reactions Following Blood Plasma Transfusions: Their Control and Prevention. W. D. Stovall.—p. 1209.
Cytology of Erythrogenic Reticulum of Bone Marrow in Pernicious Anemia Before and After Administering Folic Acid. G. Fahr and A. E. Walch.—p. 1212.
Penicillin. J. F. Briggs.—p. 1215.
Atypical Chronic Glomerulonephritis: Report of Cases. G. W. Daugherty, A. H. Baggenstoss and N. M. Keith.—p. 1218.
Relationship Between Pregnancies and Age of Occurrence of Breast Cancer in Humans: Preliminary Report. C. P. Oliver, E. T. Bell, J. J. Bittner and others.—p. 1230.
Relationship Between General Practitioner and Specialist. O. J. Campbell.—p. 1233.

New England Journal of Medicine, Boston

235:919-956 (Dec. 26) 1946

*Problems Arising in Treatment of Syphilis with Penicillin. W. R. Hill. —p. 919.
Medical Care Problem in United States. L. H. Bauer.—p. 924.
Recent Advances in Care of Surgical Complications of Diabetes Mellitus. L. S. McKittrick.—p. 929.
Medical Experiences with American Troops in Pacific, with Remarks on Diagnostic Value of Sternal Puncture in Malaria and Innocuousness of Hookworm Infection. H. D. Levine.—p. 933.
Digitalis. A. S. Freedberg and P. M. Zoll.—p. 938.
Lymphoblastic Lymphoma of Small Bowel.—p. 946.
Diverticulitis of Sigmoid.—p. 949.

Penicillin in Syphilis.—Among 75 patients with early syphilis given penicillin 2 had serologic and 3 had clinical (mucocutaneous) relapses. One of the latter group, a pregnant woman with secondary syphilis, had been treated with 1,200,000 Oxford units of penicillin. At the time of delivery of a normal appearing infant the mother's serologic reaction was positive. The serologic reaction in the infant was negative until the third month, when it became positive. At that time both the mother and the infant presented cutaneous lesions suggestive of secondary syphilis. The incidence of severe reactions in penicillin treatment is insignificant, but the Herxheimer reaction was ted in 75 per cent of patients with early syphilis; this, however, does not call for discontinuation of therapy. In order to prevent masking of syphilis, it seems necessary to subject patients receiving penicillin for gonorrhea to a six months follow-up study for syphilis. Hill says that any patient who has gonorrhea and shows an early Herxheimer reaction, evidenced by a rise in temperature after the first injection of penicillin, should be examined for syphilis.

New Orleans Medical and Surgical Journal

99:259-312 (Dec.) 1946

Infectious Hepatitis in Children. C. H. Webb, S. G. Wolfe, R. T. Lucas and C. E. Anderson Jr.—p. 259.
Acute Diarrhea in Children. J. Watt and Margaret F. Gutelius.—p. 266.
Chronic Cough in Children. R. V. Platou.—p. 270.
Meningococcal Adenitis: Case Report with Discussion. R. D. Nyman and J. W. Brueck.—p. 274.
The Well Child. D. W. Van Gelder.—p. 277.
Some Correctible Anomalies of Heart and Great Vessels. S. P. Wise. —p. 280.
Splenomegaly with Cirrhosis of Liver Complicating Juvenile Diabetes: Case Report with Splenectomy. R. Kapsinow.—p. 285.
Waterhouse-Friderichsen Syndrome: With Review of Literature and Addition of 3 New Cases from Charity Hospital of Louisiana. C. F. Wasserman.—p. 286.

Northwest Medicine, Seattle

46:1-82 (Jan.) 1947

Office Management of Chronic Arthritis. K. K. Sherwood and B. Zimmerman.—p. 30.
Gold Therapy in Rheumatoid Arthritis. W. Darley.—p. 34.
Diagnosis of Rheumatic Fever. P. F. Guy.—p. 38.
Pathology of Rheumatic Fever. W. B. Drew.—p. 39.
Trends in Electrocardiography: Bipolar Standard Limb Leads versus Unipolar Precordial Leads. M. Schwartz.—p. 43.
Psychosis Due to Bromide Intoxication. G. A. Rickles, W. H. Todd, A. A. Magliolo and T. W. Green.—p. 47.
Brenner Tumor: Case Report. J. C. Brougher.—p. 49.

Occupational Medicine, Chicago

2:421-530 (Nov.) 1946

Legal and Administrative Handicaps to Rehabilitation Program. B. E. Kuechle.—p. 421.
Symposium on Atomic Energy in Industry and Medicine: Essential Safeguards in Production and Use of Atomic Energy. J. E. Wirth. p. 428.
Atomic Energy in Industry and Physical Sciences. S. K. Allison. —p. 439.
Physiologic Effects of Nuclear Energy. S. Warren.—p. 447.
*Occupational Dermatoses in Aircraft Workers: Chromate Dermatitis. F. A. Ellis.—p. 452.
Thymol-Barbital Turbidity Test in Experimental Carbon Tetrachloride Poisoning. H. Brieger and M. H. F. Friedman.—p. 463.
*Some Hematologic Observations in Silicosis. H. Heimann.—p. 470.

Occupational Dermatoses in Aircraft Workers.—Ellis says that in an aircraft plant employing about 40,000 workers 235 persons were referred during 1944 and 1945 for examination of various dermatoses, which were suspected of being occupational in origin. Of these 133 proved to have nonoccupational dermatitis; 81 were considered to have occupational dermatitis; 21 had contact dermatitis of undetermined origin. Primary irritants were the cause of the eruption in 36 of the 81 patients with occupational dermatitis. Contact dermatitis was the cause in 24; in 20 of these the dermatitis was due to chromates. In about one fourth of the cases of occupational dermatitis the disease was due to chromates. Contact dermatitis due to chromates is usually an acute, weeping, crusted dermatitis involving the exposed parts and with occasional generalized dermatitis. Nummular lesions similar in form to nummular eczema developed in some of the patients. The eyelids were involved in 8 of the patients who had a contact dermatitis due to chromates. Hardening to chromates does not develop in workers sensitive to chromates. Patch tests with 5 per cent solution of sodium chromate and with the dry painted metal elicited reactions of similar degrees of positivity.

Hematologic Observations in Silicosis.—Heimann reports hematologic observations on 65 persons with silicosis with and without superimposed infection. He found that the disease was associated with a rise in the number of young polymorphonuclear leukocytes, a rise in mean corpuscular hemoglobin and an increased rate of erythrocyte sedimentation. In simple silicosis as well as in silicosis with infection there is a shift to the left of the polymorphonuclear leukocytes and an increase in the rate of the erythrocyte sedimentation. These data suggest that neither an abnormally increased sedimentation rate nor a shift to the left of the polymorphonuclear leukocytes in silicosis necessarily indicates that pulmonary infection is present as a complication of the fibrotic condition of the lungs.

Psychiatry, Washington, D. C.

9:293-418 (Nov.) 1946

Remarks on Philosophy of Mental Disorder. Frieda Fromm-Reichmann. —p. 293.
Social Causation in English Novel of Armistice Interval. E. Boll. —p. 309.
Psychotherapy of Adolescent Catatonic Schizophrenia with Mutism: Study in Empathy and Establishing Contact. R. P. Knight.—p. 323.
Psychiatric Activities During Normandy Offensive, June 20 to Aug. 20, 1944: An Experience with 5,203 Neuropsychiatric Casualties. P. S. Wagner.—p. 341.
Observations on Defenses Against Transference Neurosis. Joan Fleming. —p. 365.
Some Observations on Character Structure in the Orient: II. Chinese Part Two. W. La Barre.—p. 375.

Public Health Reports, Washington, D. C.

62:1-40 (Jan. 3) 1947

*Crystalline Antibacterial Substance from Lichen Ramalina Reticulata. A. Marshak.—p. 3.
*Disseminated Pulmonary Calcification: Report of 113 Cases. R. H. High, H. B. Zwerling and M. L. Furcolow.—p. 20.

62:41-76 (Jan. 10) 1947

Relation of National Mental Health Act to State Health Authorities. R. H. Felix.—p. 41.
Hospital Survey and Construction Act. V. M. Hoge.—p. 49.

Antibacterial Substance from Lichen Ramalina Reticulata.—According to Marshak, Ramalina reticulata, sometimes called California Spanish moss, is a lichen of the family Usneaceae which grows as an epiphyte along the west coast of North America. The plant has no integument but does contain in the interstices between hyphae and algal cells a carbohydrate substance which is very hygroscopic. The carbohydrate, when separated from the plant, is an excellent medium for the growth of many types of bacteria. A crystalline substance has been isolated from the lichen Ramalina reticulata, with a melting point of 191 to 192 C. and an empirical formula of $C_{17}H_{14}O_{6}$. It can be administered subcutaneously in oil daily for three weeks at a rate of 10 to 20 mg. for each 350 to 400 Gm. of guinea pig without obvious toxic effects. When so administered to guinea pigs infected intraperitoneally with human tubercle bacilli of the strain $H_{37}RV$ it appears to retard the progress of the disease.

Disseminated Pulmonary Calcification.—High and his associates collected 113 instances of disseminated pulmonary calcification and studied the skin reactions to tuberculin and histoplasmin. Of 108 patients who received both tests, 104, or 96.3 per cent, reacted to histoplasmin, while only 4 had negative reactions to this antigen. None reacted only to tuberculin, but a few reacted to both antigens. The authors think that there is strong evidence that disseminated calcifications are not frequently caused by tubercle bacilli but probably by the agent producing sensitivity to histoplasmin.

Radiology, Syracuse, N. Y.

47:551-654 (Dec.) 1946

Rheumatoid Spondylitis: Correlation of Clinical and Roentgenographic Features. E. W. Boland and E. M. Shebesta.—p. 551.
Giant Cell Tumors of Soft Tissue Origin. M. I. Smedal.—p. 562.
Osteohydatidosis: Its Radiologic Features. M. A. Bellini.—p. 569.
*Roentgen Diagnosis of Duodenal Ulcer in Right Lateral Decubitus Position. S. Brown and F. G. Harper.—p. 575.
*Cancer of Breast: Study of Patients Treated Over Period of Twenty Years in Radiation Therapy Department of Bellevue Hospital, New York City. I. I. Kaplan and R. Rosh.—p. 583.
*Subacromial Bursitis: Clinical and Roentgen Observations. H. A. Olin. —p. 593.
Significance of Calcification for Roentgen Diagnosis of Aneurysm of Abdominal Aorta. E. W. Klinefelter.—p. 597.
Therapeutic Radiology. G. W. Holmes.—p. 602.
First Fifty Years of Radiology in America: Elements Which Have Contributed to Its Growth as Medical Specialty. A. C. Christie.—p. 608.

Roentgen Diagnosis of Duodenal Ulcer.—Brown and Harper state that the fluoroscopic and roentgenographic study of the stomach and duodenum in the right lateral horizontal position has proved to be useful in arriving at a more accurate knowledge of the condition of the duodenum than can be obtained from the frontal projection alone.

Radiation Therapy in Cancer of Breast.—Kaplan and Rosh's patients belonged to three groups: those who come directly into Bellevue Hospital for a primary breast condition, those referred by other hospitals or physicians for irradiation following surgical procedures or for irradiation for recurrences or metastases, and those sent for custodial care. This report covers an additional 603 cases, bringing the total for a twenty year period to 833. The authors conclude that irradiation is a valuable adjunct to surgery in the treatment of breast cancer. The best results are achieved after early diagnosis, with preoperative irradiation, surgery and postoperative irradiation. Surgery should follow within three weeks after preoperative irradiation has been administered. X-ray therapy administered after surgery is of value in alleviating distress and in prolonging life. Endocrine therapy has proved of little value in the control of breast cancer or its metastases. Since breast cancer associated with pregnancy offers a poor prognosis, the authors advocate sterilization of young women with breast cancer.

Subacromial Bursitis.—Olin thinks that trauma is the cause of subacromial bursitis in the great majority of cases. In minor injuries x-ray examination affords little or no information. With fractures of the greater tuberosity, or comminuted fractures of the head of the humerus, there is a possibility of subsequent involvement of the bursa. The gap in the contour of the greater tuberosity left by a tear of the supraspinatus tendon invariably involves the bursa. As the condition grows older, calcium deposits occur in the bursal sac. These vary in size from fine granules of sand to large irregular calcium deposits which may fill the sac beneath the deltoid muscle and even extend to that portion beneath the acromion process. The presence of calcareous deposits in the soft tissue usually form the main criterion for an x-ray diagnosis. Stereoscopic views and oblique projections may be necessary for better visualization. In many cases roentgen therapy directed to the bursa will relieve the acute pain.

Southern Surgeon, Atlanta, Ga.

13:1-58 (Jan.) 1947

Intrathoracic Metallic Foreign Bodies: Review of Literature. E. C. Drash.—p. 1.
*Muscular Relaxation in Abdominal Surgery with Use of Pentothal-Oxygen and Curare: Report of over 600 Cases; Preliminary Report. T. C. Davison and A. H. Letton.—p. 15.
Evaluation of Thiouracil in Treatment of Hyperthyroidism. M. N. Foote.—p. 23.

Pentothal-Oxygen-Curare.—Davison and Letton have compiled the pertinent facts of 609 major operations in which pentothal-oxygen-curare anesthesia was used. For comparison they also compiled statistics on a corresponding group of patients given pentothal alone. The addition of curare diminished the amount of pentothal used by 19.3 per cent, thus allowing patients to undergo even the largest operations without the attendant dangers of deep anesthesia necessary without curare. The authors prefer the synergistic effects of pentothal-oxygen-curare in abdominal surgery over spinal, cyclo, nitrous ether or local, either alone or in combination with other agents, including curare, for the induction is rapid, the effects pleasant for the patient—postoperative complications are lowered, the danger of explosion minimized and postspinal headaches eliminated. Curare should not be used in myasthenia gravis or when the anesthetist cannot give artificial respiration. The inexperienced user of curare should proceed with the utmost caution. Curare is a valuable adjunct to anesthesia when muscular relaxation is necessary.

Tennessee State Medical Assn. Journal, Nashville

39:433-468 (Dec.) 1946

The Plot Behind Sickness Insurance. A. L. Conrad.—p. 433.

40:1-32 (Jan.) 1947

New Method for Ambulatory Treatment of Poison Ivy Dermatitis. F. G. Witherspoon.—p. 1.
Primary Atypical Pneumonia: Review of Recent Literature. W. A. Hensley Jr.—p. 3.
Heart Block.—R. B. Wood.—p. 11.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Radiology, London

20:1-44 (Jan.) 1947

Basis for Staffing of Department of Diagnostic Radiology. S. W. Davidson.—p. 1.
Primary Malignant Tumors of Bone. S. Cade, R. W. Scarff, F. C. Golding and B. S. Adams.—p. 10.
Influence of X-Ray Measurements on Pelvic Brim Index. O. S. Heyns. —p. 31.
Slide Rule for Gamma-Ray Dosage Calculations. F. S. Stewart.—p. 34.
Further Observations on Radiologic Diagnosis of Lumbar Intervertebral Disk Lesions. H. W. Gillespie.—p. 37.
Foreign Bodies in Esophagus: Technical Note on Radiologic Examination. A. S. Johnstone.—p. 41.

British Medical Journal, London

1:1-40 (Jan. 4) 1947

Review of Dietetic Factors in Liver Disease. L. J. Witts.—p. 1.
Observations on Plague Meningitis. D. Landsborough and N. Tunnell. —p. 4.
*"Sulfa-Combination"—New Chemotherapeutic Principle. A. R. Frisk, G. Hagerman and S. Helander and B. Sjögren.—p. 7.
Endogenous Depression in General Practice. C. A. H. Watts.—p. 11.
*So-Called Triple-Symptom Complex of Behcet. E. W. P. Thomas.—p. 14.

Sulfa-Combination—A New Chemotherapeutic Principle.—Frisk and his associates discuss the problems connected with the application of the "sulfa-combination principle." The mixture prepared according to this principle is "sulfadital" and contains the three compounds sulfathiazole, sulfadiazine and sulfamerazine. The authors describe the results of a number of experiments illustrating the practicability of the method. The importance of the sulfa-combination method is twofold: It appears to eliminate the risk of concrement formation at a normal dosage and makes it possible in cases with more resistant bacteria to increase the dosage considerably without greater risk of calculus formation than is possible with a single compound.

Behcet's Syndrome.—Thomas points out that Behcet in 1937 described a hitherto unrecognized morbid entity in which grave eye disease occurs in association with peculiar ulcers of the mouth and external genitals. The clinical picture is dominated by the eye lesions, which range from conjunctivitis and corneal ulceration to hypopyon uveitis and may lead to total blindness. The eye involvement may precede, coincide with or follow the oral and genital manifestations. The two eyes may be affected simultaneously, but more usually only one eye is involved for a while; after a variable interval the other eye shows similar changes. The ulcers of the mouth and genitals are small and discrete, either aphtha-like or nodular and necrotic. A similar combination of symptoms had been reported earlier by Whitwell in 1934 and Nishimura in 1935. The author describes a case which he thinks is the first to be reported in Britain.

Journal of Tropical Medicine and Hygiene, London

50:1-20 (Jan.) 1947

Comparative Study of Therapeutic Effects of Some of the Drugs Used in Treatment of Amebic Dysentery. G. A. Rail.—p. 3.
*Pleurisy Due to Amebiasis. L. B. Carruthers.—p. 12.
Jaundice in Acute and Severe Infections in the African. M. Gelfand. —p. 15.

Pleurisy Due to Amebiasis.—Carruthers states that a plastic pleurisy or pleurisy with effusion without involvement of the lung, associated with amebic hepatitis and not necessarily with abscess of the liver, is a common occurrence, the amebic hepatitis often being of such a mild nature as frequently to be overlooked. A series of 5 representative cases is reported to bring out the salient facts on which the diagnosis of this syndrome can be based. The important diagnostic points are the presence of liver enlargement, of liver tenderness to heavy fist percussion, of a history suggestive of amebic colitis or of Endameba histolytica in the stools, of the presence of an irregular, sluggish or high right diaphragm on fluoroscopy, and the absence of any indication of tuberculosis. The author thinks that any of these findings in the presence of pleuritis or of pleurisy with effusion justifies a trial of antiamebic therapy for the treatment of the pleuritis.

Lancet, London

1:1-48 (Jan. 4) 1947

The Meaning of Normal. J. A. Ryle.—p. 1.
Impending Death Under Anesthesia. H. Bailey.—p. 5.
*Clinical and Pharmacologic Aspects of Toxicity of Streptomycin. D. G. Madigan, P. N. Swift and G. Brownlee.—p. 9.
*Cerebral Beriberi: (Wernicke's Encephalopathy): Review of 52 Cases in Singapore Prisoner-of-War Hospital. H. E. de Wardener and B. Lennox.—p. 11.
Low Blood Pressure Phases Following Hemorrhage. S. Howarth and E. P. Sharpey-Schafer.—p. 18.
Agglutination of Leptospirae. A. D. Gardner.—p. 20.
Penicillin in Proteus Septicemia: Report of Case. R. Irene Hutchinson and K. J. Randall.—p. 22.

Toxicity of Streptomycin.—Madigan and his associates report the results obtained from the examination of animals and man of the pharmacologic effects of 17 batches of streptomycin. This material, though of varying purity, was free from histamine-like substances and, with one exception, antidiuretic substances; moreover, a simple relation has been found between potency and toxicity. This is in contrast to the observations previously published, which difference may be attributed to biologic variations which exist in the preparation of natural antibiotics, much as the choice of medium and the method of extraction. A graph relating toxicity and potency reveals the presence of a hitherto uncharacterized substance more toxic than pure streptomycin. This may be a toxic material present in low concentration or a second streptomycin of acute toxicity to mice. Fourteen patients have been treated systematically with these batches. The toxic manifestations were trivial.

Cerebral Beriberi (Wernicke's Encephalopathy).—De Wardener and Lennox point out that Wernicke described in 1881 fatal cases of ataxia, ophthalmoplegia and clouding of consciousness which he called acute superior hemorrhagic polioencephalitis. Subsequent descriptions emphasized the association with alcohol. From 1933 onward a deficiency origin began to be suspected, and more recent clinical and experimental work has pointed to vitamin B_1 deficiency as the principal factor. There were 52 cases of Wernicke's encephalopathy in a Japanese prisoner-of-war camp; 30 of the patients recovered. The early diagnosis, based on anorexia, vomiting, nystagmus and emotional changes before the onset of gross mental and eye changes, is emphasized. Early treatment with thiamine injections cured rapidly and completely. Acute thiamine deficiency appears to be the sole cause of the syndrome. The name cerebral beriberi is suggested.

Medical Journal of Australia, Sydney

2:825-856 (Dec. 14) 1946

Epidemiology Today. F. M. Burnet.—p. 825.
Development of Clinical Pathology. Lucy M. Bryce.—p. 830.
Cervical and Thoracic Intervertebral Disk Disease. J. H. Young. —p. 833.
Epidemic Keratoconjunctivitis in Australian Troops: Report on 56 Cases in Northern Queensland. J. Hercus.—p. 838.

2:857-888 (Dec. 21) 1946

Routine Testing for Rh Factor in Midwifery Hospital. Vera I. Krieger, Barbara Liddelow and Sara Weiden.—p. 857.
*Further Report of Epidemic of Acute Polyarthritis. G. Goswell.—p. 861.
Surgical Ballistics. F. V. Stonham.—p. 863.

Epidemic of Acute Polyarthritis.—Goswell says that during the past few years attention has been drawn to a condition characterized by painful, swollen joints, lymphadenitis and a transient exanthem, to which the term "acute polyarthritis" has been applied. Outbreaks occurred among troops stationed in the north of Australia. The author reviews observations on 51 patients, of whom he was one. Six weeks beforehand, in the Darwin area, several cases of what was at first believed to be dengue were recorded; but as the condition developed it was considered that these also were cases of acute polyarthritis. The outbreak commenced suddenly, 34 cases developing within the first ten days. All 51 had been recorded within thirty days. The possibility of this being an insect borne disease was considered, but no definite indications were found. The duration of the illness ranged from a few days to several weeks. More than 90 per cent of the men receiving treatment as outpatients had completely recovered by the seventh day. In a number of cases, however, residual stiffness persisted. In all except 1 case this stiffness had cleared within four weeks.

Tubercle, London

28:1-20 (Jan.) 1947

*Recent Experiences with BCG Vaccination in Norway. G. Hertzberg. —p. 1.
Tuberculosis in Egypt. M. S. Abaza and A. Sami.—p. 10.

BCG Vaccination in Norway.—Hertzberg says that from 1940 on when war and occupation engulfed Norway, most authorities on tuberculosis felt that greater use should be made of BCG vaccination. Records show that between 42,000 and 43,000 people were vaccinated in Norway during the war, but the correct figure is probably nearer 60,000, since many doctors omitted to send in their returns. Tuberculin-positive results were commonly reported to be as low as 50 per cent among the BCG vaccinated. Investigations on the cause of this decline are presented. The Norwegian war tuberculin from the end of 1943 and up to the present time seems a little weaker than the prewar tuberculin. This drop in potency is too small to be of statistical importance if one uses the strong Mantoux test with 1 mg. of tuberculin; on the other hand the weakening is of practical importance when tuberculin tests are carried out, using only the weak test, a single Pirquet test. Those who, in their control of the BCG vaccinated, use only the Pirquet test must be disappointed with their positive results. Although BCG vaccination does not give 100 per cent protection against tuberculosis, it does give from 75 to 90 per cent protection. Its use is justified in conjunction with other measures in the campaign against tuberculosis.

Schweizerische medizinische Wochenschrift, Basel

76:1123-1146 (Nov. 2) 1946. Partial Index

Importance of Weight Determination of Choriogonadotropin for Diagnosis of Pathologic Pregnancy. O. Kaeser.—p. 1123.
*Niemann-Pick Disease Within the Group of Lipoidoses. U. Pfandler. —p. 1128.
Digestive Tract and Vitamin Deficiencies: Critical Study. L. M. Sandoz. —p. 1131.
Technic of Continuous Registration of Microbic Growth Curve by Microbiophotometer. M. Faguet.—p. 1135.
*New Investigations on Notalysine, a Factor Distinct from Penicillin. Suzanne Hutter.—p. 1138.

Niemann-Pick Disease and the Lipoidoses.—Pfandler reviews observations on 14 members of a family in which 2 brothers died with Niemann-Pick disease at the ages of 29 and 33 years respectively. These cases demonstrate that Niemann-Pick disease is not exclusively a disease of infants and young children. A genealogical tree of the family illustrates diagrammatically the various forms in which Niemann-Pick disease became manifest. Eight members exhibited microsymptoms indicative of a disturbance in the lipoid metabolism. Hepatosplenomegaly with phosphatides can persist in the latent stage and cause little disturbance. The author believes that the latent forms of Niemann-Pick disease are possibly more frequent than is generally believed. The transmission of the disease seems to be irregularly dominant, with a tendency to more pronounced manifestation in the male sex. The primary cause of the disease is obscure.

New Investigations on Notalysine.—Hutter described in a previous report the phenomenon of staphylococcic lysis by filtrates of Penicillium notatum Westling. This bacterial lysis has been attributed to a substance designated as notalysine, which is elaborated by the fungus when it has a medium that is rich in yeasts and buffered by phosphates. The substance is insoluble in acetone and alcohol, partially soluble by chloroform and sulfuric ether and completely soluble in petroleum ether. Although the available information about notalysine does not permit its chemical identification, results so far indicate that it should not be confounded with penicillin. Penicillinase has no antagonistic effect whatever on notalysine. Notalysine is an initiator of bacteriolysis, considered by the author an antemortem anticipation of autolysis. The coordination of the play of enzymes, a sign of life, can perhaps be broken by a failure of one of the coordinated factors. Science has not yet identified this failure. It is possible that the recognition of its antagonist, the initiator of bacteriolysis, will contribute to this identification and bring the first light into the obscure problem of cytolysis.

Revista Chilena de Pediatria, Santiago

17:655-732 (Oct.) 1946

Experience with Penicillin. R. Ortega and J. Rojas.—p. 655.
*Hepatobiliary Complications of Typhoid in Childhood. Haydee Sepulveda de Borquez and Zoila Fuentes Acevedo.—p. 667.
Syndrome of Mikulicz. M. Sepulveda R.—p. 691.

Hepatobiliary Complications of Typhoid During Childhood.—Sepulveda de Borquez and Fuentes Acevedo say that among the 225 cases of typhoid treated in a children's hospital between 1941 and 1946 icterogenic hepatitis was present in 10 and acute cholecystitis in 3. One of the latter was accompanied with angiocholitis. Four of the cases of icterogenic hepatitis appeared during the first fifteen days of typhoid. In 3 of these the complication did not greatly influence the course of the typhoid, which was rather mild. The jaundice and hepatomegaly which characterized the complication were mild and disappeared in from eight to fifteen days. In 1 of the cases death occurred a few hours after hospitalization. In the remaining 6 the complication appeared after the fourth week of typhoid. This group of cases of hepatitis in the convalescence of typhoid was usually characterized by long duration and greater severity than the cases of the first group. Laboratory tests revealed increased bilirubinemia in all cases in relation to the degree of jaundice. In cases in which liver tests were made, impaired function was evident. Treatment consisted in a carbohydrate regimen in which sugar solution was given by injection and by mouth. In some cases liver extract was given and in others choline syrup.

Revista Médica de Chile, Santiago

74:661-738 (Oct.) 1946

*Blood Proteins in Infectious Hepatitis. R. Armas-Cruz, E. Montero, J. Cabello and G. Lobo-Parga.—p. 661.
Primary Atypical Pneumonia of Unknown Etiology. R. Valdivieso, G. Sepulveda and E. del Campo.—p. 670.
Latent Syphilis and Persistent Serologic Reactions. F. Prats G.—p. 676.
Dextrocardias. C. Viviani C., G. Dussaillant G. and E. Bellolio.—p. 681.
Statistical Study of Tuberculous Meningitis. J. Schwarz.—p. 691.

Blood Proteins in Infectious Hepatitis.—Armas-Cruz and his associates studied the total protein content and the albumin and globulin fractions in 29 normal serums and in 111 serum specimens from 84 patients with infectious hepatitis. They found that during the infectious stage of hepatitis there was no significant variation in the total protein figure; there was a slight decrease in the albumin figure and a clear augmentation in the quantity of globulins; that is, there was an inversion of the albumin-globulin quotient. There is a relationship between the intensity of the flocculation of the cephalin-cholesterol emulsion, the colloidal gold reaction and the figures for blood protein, serum albumin and globulin and the albumin-globulin quotient. Although the relationship between these factors is not exact, in cases in which the albumin-globulin quotient is greatly altered the flocculations are usually more pronounced than when the albumin-globulin quotient is normal or only slightly changed.

Revista Médica Cubana, Havana

57:681-762 (Sept.) 1946

Chemotherapy of Oxidation and Reduction in Treatment of Tuberculous Pulmonary Cavities. J. F. Baldor.—p. 681.
*Treatment of Typhoid by Vi Antigen. C. Fernández Brito, J. Román Crespo and A. Curbelo Hernández.—p. 702.
Curious Histologic Aspect of Thyroid in Presence of Undifferentiated Epithelioma of Lung. Z. Marinello Viudaurreta.—p. 715.

Vi Antigen in Treatment of Typhoid.—Fernández Brito and his associates used the Vi antigen prepared by the technic of Luippold in a concentration of 2,000 units per cubic centimeter on alternate typhoid patients, those with uneven numbers being treated with the antigen and those with even numbers serving as controls. In the 71 cases treated with from two to five injections of 0.1 cc. they observed psychic improvement and some shortening of the febrile period. The mortality was

4 per cent in those injected with the Vi antigen and 15 per cent in the controls. Treatment with progressive doses of the antigen resulted in detoxication of the patient, regardless of whether the patient was treated early or late. In those treated early the febrile period was shortened. The total number treated with the progressive doses was 56; their mortality was 3.57 per cent.

Revista Médica de Rosario

36:511-570 (Sept.) 1946. **Partial Index**

*Medullary Hypoplasia (Agranulocytosis). C. Alvarez and T. C. Minnhaar.—p. 542.

Medullary Hypoplasia (Agranulocytosis).—The subject of this report was a man aged 50 who was normal up to the age of 48, when he began to suffer from articular pain and icterus, and he became easily tired and rapidly lost weight. The spleen was enlarged. A diagnosis of agranulocytosis was made as a result of the hematologic examination and the examination of medullary material obtained by sternal puncture. The treatment consisted in administration of injections of liver extract, iron and arsenic preparations and vitamins. The blood improved in the course of the therapy but, a final intercurrent infection occurred. The disease in the reported case seemed to be due to chronic silver nitrate poisoning from the use of a hair dye by the patient.

Wiener klinische Wochenschrift, Vienna

58:709-724 (Nov. 29) 1946. **Partial Index**

Psychiatric Instruction in the Medical Curriculum O. Kauders.—p. 709.
Irradiation of Hypophysis in Menopausal Disorders. A. Kotek.—p. 714.
*Amaurosis in Perforated and Bleeding Duodenal Ulcers. D Forgarasi. —p 716
Late Sequels of Oral Lesions Caused by Caustic Substances. P. Adler and I Jakabfi —p. 717.

Amaurosis in Perforating and Duodenal Ulcer.—Forgarasi observed blindness in a man aged 49 with bleeding and perforated duodenal ulcer. The patient had had gastric disturbances almost constantly since 1940. Blindness following loss of blood has received little attention in the surgical literature, but the ophthalmologic literature reports a considerable number of such cases. In men, usually of the fourth and fifth decade of life, it is generally hemorrhages in the gastrointestinal tract that are responsible for this form of blindness. In women, however, this form of amaurosis is usually observed after profuse loss of blood incident to childbirth or abortion. Amaurosis has been observed also after venesection. The degree of visual disturbance varies, but loss of vision is usually complete. For the treatment blood transfusions have been recommended, but also liver and iron preparations as well as acetylcholine and strychnine. The prognosis is usually unfavorable

Harefuah, Tel-Aviv

No. **2:**1-60 (Nov.) 1946

Sterility in Women. B. Zondek.—p. 3.
Remittent Rural Fever: (Febris Remittens Agricolarum). J. Yatom. —p 22.
Huet-Pelger Anomaly of Nuclei of Leukocytes in Jewish Family in Palestine. L. Nelken.—p. 32.
*Dermatitis Among Workers Employed in Citrus By-Product Industry. M. Seidmann.—p. 39.

Dermatitis in Citrus Industry.—Seidmann says that workers who come into contact with the different parts of citrus fruits may develop paronychia, necrosis or dermatitis. Paronychia develops because the juice and the moisture foster the growth of fungi, which are probably the causative agent. Necroses or "holes" are slowly healing ulcers, seen among those engaged in peeling. Here there is the double effect of cutting with the knife and the caustic action of the juice and of the peeling. Discussing dermatitis, the author says that the most important part from the standpoint of irritation is the extract of the peel, i. e. the ethereal oil. Observations reported here were obtained in visits to factories and fruit groves and in studies on 40 cases of dermatitis. It is most prevalent among young people, women and European Jews. The texture of the skin seems to be a factor. As to the kind of fruit, most of the cases were among those coming in contact with lemons; second in order were bitter oranges, then grapefruit and finally oranges. Those handling the peels and employed in the expression of the ethereal oil are most affected. The author further discusses the varieties of eruption, the results of patch tests on patients d protective measures.

Acta Dermato-Venereologica, Stockholm

27:83-172 (No. 2) 1946

Disturbance of Pigmentation in a Half Caste: Riehl's Melanosis. Poikiloderma of Civatte. L. Spira.—p. 83.
**Tuberculous Primary Infection of Genitalia: Two Cases of Venereal* Genital Tuberculosis. R. Bjørnstad.—p. 107.
Clinical Features of Over 1,200 Syphilitic Chancres and Chancroids and Over 140 Cases of Lymphopathia Venerea. R. D. G. P. Simons. p. 115.
*Increasing Chemoresistance in Gonorrhoea. O. Nørgaard.—p. 123.

Tuberculous Primary Infection of Genitalia.—The first of the 2 cases of primary tuberculous infection of the genitalia reported by Bjørnstad concerned a previously Pirquet negative woman aged 21 in whom tubercle bacilli were found not only in the pus from an inguinal fistula but also in a lesion on the left labium. She had had intercourse with a man who had tuberculous epididymitis. The second patient was a man aged 32 who had been Pirquet negative. He developed a swelling of the lymph nodes in the right groin and two weeks later a slightly indurated preputial ulcer. His wife had a tuberculous salpingo-oophoritis, and her menstrual blood was found to contain tubercle bacilli. The author stresses that the possibility of tuberculous primary infection ought to be considered in obscure cases of genital ulcer with involvement of the regional lymph nodes.

Increasing Chemoresistance in Gonorrhea.—Nørgaard reviews the Scandinavian literature on chemoresistance in gonorrhea. He finds that practically all authors agree that chemoresistance is increasing in the Scandinavian countries. He reports observations in 1,487 cases of gonorrhea that were treated with sulfathiazole in the outpatient department of Rudolph Bergh's Hospital in the years 1944, 1945 and 1946. It has been found that for the past three years there has been no further increase of the chemoresistance; it now remains stationary, in men at 60 to 65 per cent and in women at 45 to 50 per cent. Chemotherapy gives better results in women than in men. Chemotherapy gives better results in older than in younger persons.

Acta Medica Scandinavica, Stockholm

126:*97-264 (Nov. 9) 1946.* **Partial Index**

Investigations of Epinephrine Concentration in Blood: V. Commentaries on Formation of Epinephrine and Its Physiologic Mission (Epinephrine-problem). M. Kobro.—p. 97.
Enigma of Renal Iodine Excretion, Together with Remarks on Reserve Capacity of Kidneys. G. Ekeborn.—p. 117.
Penicillin Treatment of Subacute Bacterial Endocarditis. M. Trier. —p. 140.
Electrocardiogram in Derangements of Organism's Water and Electrolyte Metabolism. O. J. Broch.—p. 157.
Relation of Neurocirculatory Dystonia to Essential Hypertension, Angina Pectoris and Peptic Ulcer. P. Brummer.—p. 177.
*Bronchial Asthma Caused by Sulfathiazole. M. Rosberg.—p. 185.
Calculation of Urea Clearance with Varying Degrees of Urine Concentration. J. Bing.—p. 199.
Clinical Results Obtained by Use of Sulfamethylpyrimidine (Peroccide). P. van der Meer.—p. 224.
*Neostigmine in Treatment of Muscle Spasm in Rheumatoid Arthritis. T. Wramner.—p. 241.

Bronchial Asthma Caused by Sulfathiazole.—Rosberg reports the histories of 2 nurses, both of whom were exposed to sulfathiazole powder in the course of their daily work. Both developed typical attacks of asthma. At the same time eosinophilia could be registered in the blood. Epicutaneous tests with sulfathiazole were negative, but positive reactions were obtained with 2-aminothiazole hydrochloride (in both cases) and acetylsulfanilchloride (in 1 case), substances probably formed by the decomposition of the sulfathiazole in the organism. These reactions are possibly caused by a sensitization of the skin for these elements. There exists, however, also a possibility of allergy to a whole group of chemically related elements.

Neostigmine in Muscle Spasm in Rheumatoid Arthritis.—Wramner investigated the relaxing effect of neostigmine on muscle spasm in 25 patients with rheumatoid arthritis and associated conditions. The neostigmine was administered subcutaneously in doses of from 0.25 to 1.25 mg. once daily. In 21 of the 25 patients there resulted a decrease in muscular pain, muscle rigidity and pain on movements, and an increase of mobility was observed. The effects appeared within ten to twenty minutes after the subcutaneous injection and lasted up to fourteen hours. Neostigmine probably causes this effect by depressing the motor cells of the anterior horn.

Book Notices

The X-Ray Treatment of Accessible Cancer. By D. Waldron Smithers, M.D., D.M.R., Director of the Radiotherapy Departments, The Royal Cancer Hospital (Free) and the Royal Free Hospital, London. Cloth. Price, $8.50. Pp. 147, with 116 illustrations. William Wood & Co., Mt. Royal & Guilford Aves., Baltimore 2, 1946.

This book is a first edition written by a well known English radiologist and therapist. The author has selected those cancers which are easily accessible for direct irradiation with roentgen rays, namely cancer of the skin, genitalia, mouth and other body cavities, and those in sites rendered accessible by surgical exposure, excluding the breast. He shows wise discretion in such a selection, for this is one branch of roentgen therapy in which the results are beyond question. The author emphasizes the point that, although some cases of accessible cancer should be treated by irradiation alone and others by surgery alone, there are many others in which irradiation and surgery complement each other. He also mentions that radium may be of equal value in some of the conditions described but confines his discussion entirely to the use of roentgen rays.

The author presents a concise and comprehensive description of the equipment and apparatus available at present for the treatment of accessible cancer. He also details the classification, staging, records and assessment of results of therapy. The procedure of biopsy, particularly serial biopsy, during treatment, with special reference to cell counts, is evaluated both for the given case under treatment and for future use in determining the response of various tumors to irradiation so that eventually a more definite tumor dose may be established for these cancers.

The author's grouping of accessible cancers according to their locality rather than their histologic origin will be a helpful and handy reference in everyday practice. The text covers the parts of the body where accessible cancers are found, including in each description the frequency of various types of cancer in each locality, the clinical diagnosis, differential diagnosis, pathologic and histologic findings, the treatment of each type and evaluation of results of treatment.

The chapter on the use of roentgen therapy in the treatment of cancers made accessible by surgical exposure lays open to the imagination the future possibilities for treatment by direct irradiation of these previously "internal," inaccessible cancers. The inadequacy of treatment of internal cancers has not been entirely the resistance of the tumors to irradiation but the inability to deliver sufficient irradiation without irreparably injuring normal tissues. There are also technical difficulties, particularly the difficulty of directing the incident beam so that it correctly falls on the tumor under treatment.

The book contains a summary of the literature and descriptions of the generally accepted technics. Among its finest features are its illustrations in colored and black and white reproductions showing lesions before, during and after treatment. It well deserves a place in the library of every therapist.

Peptic Ulcer: Its Diagnosis and Treatment. By I. W. Held, M.D., F.A.C.P., Attending Physician, Beth Israel Hospital, New York, and A. Allen Goldbloom, M.D., F.A.C.P., Assistant Clinical Professor of Medicine,. New York Medical College and Flower-Fifth Avenue Hospital, New York. Cloth. Price, $6.50. Pp. 382, with 110 illustrations. Charles C Thomas, 301-327 E. Lawrence Ave., Springfield, Ill., 1946.

The selection of the title for this book is probably unfortunate. While peptic ulcer is a convenient term, it does not convey a precise meaning. The foreword states that the phrase as used includes ulcers found in that portion of the intestinal tract extending from the esophagus to the jejunum inclusive as well as in Meckel's diverticulum. But as might be expected the greater portion of the book is devoted to a discussion of ulcers of the duodenum and stomach. The distinction between gastric and duodenal ulcer should be sharply drawn. It is better to speak of duodenal ulcers and benign gastric ulcers as two separate entities. There is, of course, no place for the medical management of a malignant ulcer, a fact which in itself sets off the ulcer in the stomach from that in the duodenum. The authors also divide ulcers into simple and complicated types. Since the catastrophes due to ulcers are ordinarily the results of complications regardless of the site, the choice of this division is therefore not the best. The use of the term "catarrh" for gastritis is unscientific.

The subject matter is divided into chapters on pathogenesis, pathology, diagnosis and treatment. Roentgen diagnosis is well described. Various forms of medical treatment of ulcer are thoroughly discussed. Surgical treatment is briefly outlined, including the complications. The writers minimize the importance of removing the pylorus, and one feels that the concepts of surgical treatment of the past decade are not well presented. Thus there is no mention of vagotomy. Some errors are noted. The insulin effect on the vagus centers will increase rather than decrease gastric acidity. There is nothing mysterious about the tetany associated with vomiting in severe pyloric obstruction. It should be presented as a straightforward alkalosis tetany, and it does not carry with it a mortality of seventy per cent in spite of treatment. The modern knowledge of fluid and electrolyte replacement deserves a more scientific elucidation. The clinical experience of the authors is evident, and there is much of wisdom in their description of the clinical phases of the problems associated with ulcers.

With the passage of sufficient years since x-ray diagnosis of ulcers of the stomach and duodenum became established, the medical management of these lesions has come to need a thorough statistical analysis. Then we may have answers to the questions What is the recurrence rate of medically treated ulcers? and What is the incidence of complications following supposedly adequate medical management? Then the rationale of treatment, whether medical or surgical, can find itself on a firm basis.

The Cultivation of Viruses and Rickettsiae in the Chick Embryo. By W. I. B. Beveridge and F. M. Burnet. Medical Research Council, Special Report Series No. 256. Paper. Price, 2s. Pp. 92, with 10 illustrations. His Majesty's Stationery Office, York House, Kingsway, London, W. C. 2, 1946

This publication is a revision and amplification of a previous monograph by one of the authors (Burnet) published in 1936. It constitutes therefore a helpful though brief review of published results of the use of the chick embryo method during the intervening period of ten years. The introductions to the two monographs are quite similar, covering mainly the history of the method, the management of eggs before inoculation, development of the embryonic membranes of the chick and procedures for inoculating the chorioallantois. In addition, the present report describes several new methods of inoculation that have been usefully employed by various investigators for special purposes, including procedures for amniotic, allantoic, yolk sac, intravenous, intracerebral and other routes of inoculation. Likewise successful inoculations of human skin, amnion and chorion grafted on the chick chorioallantois, especially for studies of certain viruses to which the chick embryo is insusceptible, are described. The twelve pages of references, in contrast to the one and one-half pages of the first publication, indicate the numerous contributions that have been made by means of the chick embryo method during the past decade. The authors refer to these accessions adequately though briefly in their chapter (v) on the cultivation of individual viruses and rickettsias.

Ten years ago Burnet listed fifteen viruses that had been successfully cultivated in the chick embryo. In the present report the cultivation of thirty-seven viruses is described, including in the late additions such agents of human disease as the viruses of smallpox, yellow fever, rabies, St. Louis and Japanese B encephalitis and mumps. The usefulness of the method for preparing vaccines is emphasized, especial attention being devoted to vaccines against influenza, yellow fever, equine encephalomyelitis, fowlpox and laryngotracheitis of fowls—now processed extensively from infected chick embryos. In the 1936 report brief reference was made to successful cultivation of the rickettsias of typhus and Rocky Mountain spotted fever in the chorioallantois. In the meantime the method of cultivation by inoculation of the yolk sac was developed by Cox and by this means a variety of rickettsias can now be grown in quantity, and vaccines from this source have been prepared against epidemic and murine typhus, Rocky Mountain spotted fever, Q fever, boutonneuse fever and Tobia fever. The development and use of these methods is adequately treated. In the earlier treatise, except for a brief mention of the cultivation of the micro-organism of bovine pleuropneumonia, no consideration was given to the cultivation of bacteria and other micro-organisms in chick embryos. In the intervening period the method has been extended to studies of infection by bacteria, fungi and protozoa. As a result, early stages of infection by such microorganisms as Hemophilus pertussis, Bacterium tularense, the Brucella strains, Pasteurella pestis and meningococcus have been studied in investigations of pathogenesis.

Recently the causative agent of granuloma inguinale (Donovania granulomatis) was grown by yolk sac inoculation and identified for the first time by Anderson. Brief accounts of these applications of the chick embryo method are included in the report. The authors have not been sufficiently impressed by the importance of histologic, and especially cytologic, aspects of lesions induced in embryos by the various agents used, and in this respect nothing more has been contributed by the present publication than was contained in Burnet's monograph of 1936. The question is still left in doubt by the authors as to the regular occurrence in embryonic lesions of specific intracellular inclusions in such infections as vaccinia and herpes simplex, in which careful studies have demonstrated these structures in characteristic detail.

Since publication of the monograph under consideration there has appeared the important series of studies by Dr. Shope and his associates concerning the cultivation of the virus of rinderpest in developing hen's eggs and the preparation of an effective vaccine from this source by means of an attenuated strain of the virus resulting from repeated egg passages. The great importance of the chick embryo for studies of pathogenesis and for elucidating the cell-parasite relationship receives little or no consideration, but the extensive bibliography will be very helpful to those who wish to use the chick embryo method for experimental investigations.

Ernährungsprobleme in Mangelzeiten: Die schweizerische Kriegsernährung 1939-1946. Von Prof. Dr. med. Alfred Fleisch, Ordinarius für Physiologie und Direktor des Physiologischen Institutes an der Universität Lausanne. Cloth. Price, 32 Swiss francs. Pp. 518, with 35 illustrations. Benno Schwabe & Co., Klosterberg 27, Basel 10, 1947.

This book summarizes the nutritional experiences of Switzerland from 1939 to 1946 as seen by the national commission on wartime food controls. While the text is in German, each of the fifteen chapters includes a summary in French. In addition to a priceless fund of quantitative facts there are interesting discussions of the psychology of rationing, black markets, rich and poor refugees, and so on. The facts corroborating Hindhede's controverted report that about 60 Gm. of protein is an adequate daily allowance for adults are summarized on page 269. Statistics on diabetes are analyzed and lead to the conclusion (p. 381) that the incidence of this disease is influenced more by income level than by any other factor. Facts and explanations regarding the undeniable decrease in dental caries in children during the war are summarized on pages 459-463. The foregoing examples have been taken at random to illustrate the interesting and important nature of the contents; there are few theoretical or practical areas in the field of nutrition that are not enriched by the facts which the author presents, and no physiologist or biochemist can afford to remain in ignorance of this work.

Scoliosis: The Practical Approach to Treatment. By Beatrice Woodcock. Cloth. Price, $2. Pp. 111, with 50 illustrations. Stanford University Press. Stanford University, California; Oxford University Press, Amen House, Warwick Square, London, E. C. 4, 1946.

This is a small, compact, cloth-bound volume generously illustrated with photographs, line drawings and x-rays. The author is a physical therapist whose interest in the subject of scoliosis was stimulated years earlier while she was director of physical therapy at the University of Iowa, under the direction of Dr. Arthur Steindler. The mechanics of scoliosis is explained in terms that are easily understood. The plan of treatment by exercises is based on this interpretation of the reason for the rotation and lateral curvature of the spine which is characteristic of the deformity. Although the book will be of greatest value to students and to physical therapists, there is much to be found in it which the average physician, who is daily dealing with patients affected with scoliosis, will either have never learned or have forgotten. It should be noted that x-ray record 1 a in the appendix is upside down. Otherwise this book has been refully edited.

Pharmacology and Therapeutics. Originally Written by Arthur R. Cushny, M.A., M.D., LL.D. Thirteenth edition by Arthur Grollman, A.B., Ph.D., M.D., Professor of Medicine and Chairman of the Department of Experimental Medicine, the Southwestern Medical College, Dallas, Texas, and Donald Slaughter, B.S., M.D., Dean of the Medical School, University of South Dakota, Vermillion. Cloth. Price, $8.50. Pp. 868, with 74 illustrations. Lea & Febiger, South Washington Square, Philadelphia 6, 1947.

For forty-eight years Cushny's textbook in pharmacology has been recognized as one of the authoritative works in this field. The last edition prepared by Professor Cushny was the eighth, which appeared in 1924, and subsequently four editions were prepared by the Anglo-American team of Professors J. A. Gunn and C. W. Edmunds. The last edition prepared by them appeared in 1940, and the death of Professor Edmunds and the resignation of Professor Gunn necessitated the appointment of new editors. That the choice of these editors was a happy one is evidenced by the high quality of the present edition.

Because of the rapid advance of the science of pharmacology during the past seven years, the text had to be thoroughly rewritten, much old material deleted and even more new material added. The present editors succeeded in making this extensive revision without destroying the fundamental approach to the subject which was characteristic of the original author and, indeed, one can surmise that this revision is exactly in line with what Cushny would have wished.

Although all sections of the book have undergone some revision, those which have been most completely rewritten include the metals, bile and bile salts, alcohol, anesthetics both general and local, barbiturates, ergot alkaloids, hormones, vitamins, quinine and other antimalarials, hydroxyquinoline derivatives, sulfonamides, and the serums and vaccines. Among the new sections added are those on carbon monoxide, helium, BAL, meperidine hydrochloride (demerol, isonipecaine), anticonvulsants, analeptics (which were included under "volatile oils" in the twelfth edition), di-isopropyl-fluorophosphate, new sympathomimetic drugs, thiouracil, hematics, including heparin, dicumarol and fibrin products, new antimalarials, new sulfonamides, penicillin and other antibiotics, and new anthelmintics.

A number of minor criticisms and a few major ones may be directed at the present edition. One serious error was noted on page 184, where the dose of Mapharsen is given as 0.6 Gm. and which should read 0.06 Gm.

It is questionable whether the subject of counterirritation and the preparations used for this purpose deserve ten pages of text which could be well devoted to more important subjects. The discussion of the treatment of acute alcoholic intoxication includes the recommendation for strychnine injections, which are of questionable value, but omits mention of the use of the newer analeptics such as Metrazol, Amphetamine or desoxyephedrine. Nine pages are devoted to a discussion of the actions of strychnine, although the authors acknowledge its lack of therapeutic value in any of the conditions for which it has been proposed. Why, then, devote so much space to a useless drug?

The section on pentnucleotide leaves the impression that it is of value in agranulocytosis, but most authorities have concluded that it is ineffective. Furthermore, in discussing the treatment of agranulocytosis in the section on antipyretics, the authors neglect to recommend the most valuable form of treatment, namely the use of massive doses of penicillin.

The section on the sulfonamides could, perhaps, be improved by laying more stress on the adverse reactions and sensitization following local use of the drug, and on the rapid development of drug-resistant strains of organisms, particularly in the treatment of gonorrhea. The use of "units" in discussing streptomycin dosage is unfortunate, since as early as the fall of 1945 all market packages of the drug were labeled in terms of weight.

It is surprising that more information on Benadryl and Pyribenzamine is not to be found in the text, particularly in view of the good discussions on other drugs such as BAL and D.F.P., about which information was made available only recently.

Despite the criticisms offered, the volume is a valuable and competent revision of a standard textbook. Furthermore, it has the distinct advantage over other well known textbooks in pharmacology of being completely up to date. The book is printed on excellent paper and is attractively bound. It can be recommended as an excellent textbook for teaching and reference.

The Use of Research by Professional Associations in Determining Program and Policy. By Esther Lucile Brown, Director, Department of Studies in the Professions, Russell Sage Foundation. Paper. Price, 25 cents. Pp. 39. Russell Sage Foundation, Publication Department, 130 East 22d St., New York 10, 1946.

Not all of the policies and activities of an effective, progressive professional association can be determined at the conference table. Nor can they be determined solely by salaried professional staffs. The need for sound planning and careful research by a trained research staff is emphasized in this brief review, which deals principally with the methods, or lack of methods, by which the most important functions of professional organizations are carried on.

At present the main phases of association activities in which research is an important factor are professional education, enlargement of professional service, salaries and personnel policies, and structure and function of the associations. The greatest progress in research has been made in the field of professional education as exemplified in the studies made by the American Library Association, the American Association of Dental Schools and the American Medical Association. Standards of education have been raised and improved through the efforts of organizations such as these, by means of intensive research into the educational situation in their respective fields.

The author emphasizes the need for better research into the service aspect of the organization with greater stress being put on the expansion of professional service to meet more fully the needs of the population. Coordination and cooperation with comparable associations in related professions is also urged as a necessary field for study and research.

This pamphlet presents a candid view of professional associations, noting their inadequacies, commending their accomplishments and pointing out means of developing their activities and influence through scientifically planned programs. As a critical analysis it should be brought to the attention of all professional association staff members.

Experimentelle Grundlagen zu einer modernen Pathologie: Von der Zellularzur Molekularpathologie. Von P. Busse Grawitz. Cloth. Price, 32 Swiss francs. Pp. 359, with 126 illustrations. Benno Schwabe & Co, Klosterberg 27, Basel 10, 1946.

In this monograph the author describes experiments which, he thinks, refute some of the fundamental concepts of Virchow and Cohnheim with respect to the origin of cells of inflammation. By means of tissue culture or by implantation of tissues into animals, particularly tissues coated with collodion, he arrives at the conclusion that there are humoral forces which determine cell growth or regression, either stimulating or inhibiting. The book contains 120 photomicrographs and 6 colored plates, which serve as a basis for the author's conclusions. Various technics are described for the study of cellular changes which may help to elucidate obscure problems of histology and pathology, particularly the problem of cancer. The monograph will be of interest to those who wish to explore the possibility that cells do not necessarily arise from other cells but may arise from connective tissue ground substance or even from tissues from mummies.

Principles in Roentgen Study of the Chest. By William Snow, M.D., Director of Radiology, Bronx Hospital, New York. Fabrikoid. Price, $10. Pp. 414, with 508 illustrations Charles C Thomas, 301-327 East Lawrence Ave., Springfield, Illinois, 1946.

This employs a slightly different pattern from that of the conventional textbook. The descriptions of the lesions are given in a short and abbreviated style, much as one would prepare an abstract. The author has not attempted to consider any of the excellent contributions to the study of chest diagnoses nor has he considered many of the accepted physiologic and pathologic concepts in arriving at the chest diagnoses. He does consider briefly bronchial spasm, carbon dioxide tension and lung circulation. As one studies the book the lack of reference material is apparent. The illustrations, some of which are good and some poor, have very short legends and the majority of them do not include a history. One feels the need for illustrations made in views other than many of those included. The lack of emphasis on differential diagnosis is felt throughout. Likewise the author does not include any consideration of the contribution of body section roentgenography in the diagnosis of obscure lesions. The arrangement of many of the illustrations is most unusual. Those that are arranged symmetrically are pleasing to the eye but those that are offset and which stick out into the margin are quite unusual. The index does not refer to any of the illustrations, and on turning to the subject matter one often does not find an illustration of the subject of discussion. A number of the illustrations are excellent, but there are some which do not show the lesions that the author wishes to demonstrate, and this is in spite of the fact that both space and size of illustrations are adequate.

Principles of Anatomy and Physiology for Physical Training Instructors in the Royal Air Force. Great Britain, Air Ministry, Air Publication 3125. Cloth. Price, 7s. 6d. Pp. 180, with 158 illustrations. His Majesty's Stationery Office, York House, Kingsway, London, W. C. 2, 1946.

This book attempts to explain important principles of anatomy and physiology having a direct relationship to the Royal Air Force physical training program. The approach to the problem is functional, with emphasis given to the kinesiology involved. Chapters I, II and III are devoted to the fundamental anatomy of bones, muscles and joints, while chapter IV is concerned with the basic physiology having rather direct bearing on exercise. In the remaining portions of the book one chapter is given over to a discussion of posture and corrective exercises, breathing, fitness for flying, general fitness, the instructor's part in rehabilitation and questions commonly asked by instructors. The book is essentially of manual type, having the specific purpose of furnishing a condensed overview of what a professionally prepared physical educator in this country would get in a number of undergraduate courses. Anatomy, physiology, kinesiology, physiology of exercise and corrective and adapted activities are all touched on. The majority of American teacher training institutions commonly offer these subjects as at least semester courses in the professional physical education curriculum. The section devoted to rehabilitation of surgical and medical cases describes the place of graduated exercise in the remedial program. The relations of the supervising physician and the instructor are discussed, and the need for careful and individual handling of men in various stages of illness and recovery from injury is stressed. The manual is well printed and illustrated and presents basic principles in concise form. It should prove useful in situations in which needs exist similar to those evidently found among the Royal Air Force physical training personnel.

Vitamins and Hormones: Advances in Research and Applications. Edited by Robert S. Harris, Professor of Biochemistry of Nutrition, Massachusetts Institute of Technology, Cambridge, Massachusetts, and Kenneth V. Thimann, Associate Professor of Plant Physiology, Harvard University, Cambridge, Massachusetts. Volume IV. Cloth. Price, $6 80. Pp. 406, with illustrations. Academic Press, Inc., 125 E. 23d St., New York 10, 1946.

This is the fourth volume of a series of publications on vitamins and research that has provided a useful reference source for those who seek advanced knowledge. The books are not for those who would only glimpse casually the fund of knowledge now opened by research on endocrinology and vitaminology but for those who want thorough reviews of the more intricate problems related to these special fields of science. Included in volume IV are discussions of the newer hemopoietic factors of the vitamin B complex, nutrition and resistance to infection, manifestations of nutritional deficiency in infants, effect of B vitamins on the endocrinologic aspects of reproduction, nutritional therapy of endocrine disturbances, the thyroid and diabetes, thyroactive iodinated proteins, the protein anabolic effects of steroid hormones, and methods of bioassay of animal hormones.

The chapters are well oriented and instructive and the contents presented in an interesting style in spite of somewhat voluminous detail. Each chapter is supported by many references and is divided into logical subheadings. While they will be read, unfortunately, essentially only by specialists, teachers and research workers, the discussions provide information that is of value to practically all medical students and to most practitioners. The use of vitamins and endocrines in modern medical practice requires constant study because of new concepts and advancing knowledge. Such books as the present serve a useful and helpful role by providing a source for obtaining up to da and more than casual information.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

TREATMENT OF MYASTHENIA GRAVIS

To the Editor:—A patient with myasthenia gravis is getting neostigmine methylsulfate (by injection) and the bromide orally; also ephedrine. I wonder if there is anything else with which to supplement the treatment? A study of the obscure etiology suggested the use of calcium ascorbate intramuscularly to detoxify (the disease may be due to some unknown toxin) and the use of acetylcholine with or without thiamine (it may be due to a defect at the neuromuscular junction). Please give precautions to be taken, if any, when acetylcholine and thiamine are given simultaneously. Would administration of aminoacetic acid and partly predigested proteins (proteolysate, amigen) along with pyridoxine (they say pyridoxine is essential to insure a normal amino acid metabolism) be of any use?

M.D., Michigan.

ANSWER.—Neostigmine bromide in divided doses of 15 to 30 mg. each is the most efficient treatment at the present time for myasthenia gravis. The drug is usually taken by mouth, spaced throughout the day and night. For some patients neostigmine in the form of the methylsulfate as a supplemental measure is needed. The methylsulfate form is given by intramuscular injection in doses of 0.5 to 1.5 mg. Ephedrine sulfate 24 mg. is also of considerable value in the treatment of myasthenia gravis. The average dosage of the combined neostigmine and ephedrine for ambulatory cases is about ten to twelve tablets of neostigmine bromide (15 mg.) and two to three tablets of ephedrine sulfate (24 mg.) in a period of twenty-four hours. Usually the drugs are taken every two to three hours from 7 a. m. to 11 p. m.; occasionally one or two tablets may be needed at 2 a. m.

Ephedrine sulfate was the chief drug used in the treatment of myasthenia gravis before the introduction of neostigmine, and many patients were maintained in a state of reasonable health by this drug alone. It is now almost exclusively used as a secondary medication to neostigmine, being about 10 per cent as efficient as the latter drug. Ephedrine sulfate, when taken by mouth, tends to fortify, prolong and smooth out the action of neostigmine bromide. It may be given either by capsules or as tablets. Ephedrine is usually given before noon, as it frequently causes insomnia if given later in the day. Three pills of 24 mg. each is the ordinary dose, but it may be used in smaller amounts four or five times a day. Since 1935, when neostigmine bromide was first introduced, many other drugs have been used. None except ephedrine have been as efficient as neostigmine in overcoming the muscular weakness in myasthenia gravis.

Guanidine hydrochloride may be used in doses of 125 mg. three or four times a day by mouth. Toxic symptoms such as nausea, abdominal cramps, muscular twitching and paresthesias, particularly of the lips and fingertips, are not infrequently encountered. After many months patients may become more tolerant to the drug and many or all of the untoward symptoms will disappear. The drug may be used alone with a moderate degree of efficiency. When used as a supplemental drug to neostigmine, guanidine is of value in about 5 per cent of the cases treated. It is thus somewhat less effective than ephedrine sulfate. Some patients use it exclusively.

Potassium salts, like guanidine, increase the sensitivity of muscle to acetylcholine. Clinically the salts tend to prolong the effect of neostigmine, but only when used in large doses. Patients may require 10 to 12 Gm. three times a day, an amount that cannot be tolerated easily by most persons. Because the drug causes gastric distress and urinary frequency, most patients prefer not to take it over any considerable period of time. It is somewhat more palatable when added to a mixture of egg and milk.

Aminoacetic acid (glycine) in doses of 10 Gm. three or four times a day is ineffective. Even larger doses have not been of value. The drug does not have a place in the treatment of myasthenia gravis.

Calcium ascorbate, proteolysate, amigen, pyridoxine and thiamine have not been given special mention in the literature on myasthenia gravis.

Di-isopropyl-fluorophosphate produces less improvement in myasthenia gravis than does neostigmine. The dose must be limited because of the toxic effects of the drug. Two to 3 mg. intramuscularly may be given once or twice a week to supplement the effect of neostigmine.

Acetylcholine and the other derivatives of choline, acetyl-beta-choline (mecholyl) and carbaminoylcholine (doryl), are unsuitable for clinical use because of their transient and variable effects. They have a similar parasympathomimetic effect to neostigmine, but when given orally the results are uncertain and if used subcutaneously the drugs are not easily controlled. The toxic effects are quickly overcome by the intravenous use of 0.5 to 1.0 mg. of atropine. Neostigmine is so far superior to acetylcholine, mecholyl or doryl in the treatment of myasthenia gravis that these drugs are no longer used except in experimental investigations.

Many endocrine preparations have been tried in the treatment of myasthenia gravis without affecting either the symptoms immediately or changing the natural course of the disease. The anterior pituitary hormones have been fully investigated, as well as thyroid and thymus extract and adrenal cortical substances. The adrenotropic factor in the anterior pituitary is now under clinical trial. As myasthenia gravis shows a strong tendency to spontaneous remissions and relapses, fluctuations in relation to menstruation and pregnancy and some hypothetical relation to the thymus gland, an endocrine factor in the disease is reasonably certain. No therapeutic measures, however, based on endocrines have been sufficiently promising to justify their continued use. Thymectomy too has been disappointing. Some relief has been afforded to a few patients, usually consisting in their ability to be adequately maintained on less neostigmine than before the operation. In a few instances thymectomy has been followed by complete remission; in many, no change has occurred. Patients are not made worse by thymectomy, but the operative mortality is high (10 to 25 per cent) and the results are so equivocal that fewer operations are now being done than three or four years ago. Patients with thymomas did not do better after thymectomy than persons with normal or slightly hypertrophic glands. Complete remissions of spontaneous origin, moreover, are not unknown in the natural course of the disease, thus making any evaluation of treatment, medical or surgical, a hazardous procedure.

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FLUORESCENCE OF NAILS

To the Editor:—It has been reported (Ginsberg, Julius E., and Shallenberger, Paul L.: Wood's Light Fluorescence Phenomenon in Quinacrine Medication (The Journal, July 6, 1946, p. 808) that following discontinuance of quinacrine therapy the characteristic greenish yellow fluorescence exhibited by the nails beneath Wood's light disappears last from the nail of the great toe. Can this be explained on the basis of differential rates of growth of the various toenails, or is an additional factor involved?

W. Q. Wolfson, M.D., Chicago.

ANSWER.—The explanation of this phenomenon is believed to be on the basis of the different rates of growth of the different nails. The fluorescence appears to disappear from the proximal portion of the nail within a month or two after quinacrine is stopped. As time goes on this clear proximal portion becomes greater and gradually results in a fading distal fluorescence. It is felt that if absorption of quinacrine from the nail had occurred, the fading process would have involved the entire nail instead of having its origin and end result as reported.

It seems to have been established in human beings that there is some gradation of growth rate in the various nails of the body and that the great toe, being the largest nail and usually the thickest, probably has the slowest rate of growth. In addition to the foregoing comments, the inquirer may be interested in referring to a previous article on this subject entitled "Unusual Pigmentation Developing After Prolonged Suppressive Therapy with Quinacrine Hydrochloride," by Lutterloh and Shallenberger (*Arch. Dermat. & Syph.* **53**:349 [April] 1946). In this study the deposits of quinacrine were observed to remain in relatively the same spot where they originally occurred. The interpretation of this was that the pigment had been deposited in the nail bed rather than in the nail itself. It was accordingly believed that the fluorescence is a phenomenon of diffuse drug distribution while the pigmentation is most likely a result of periodicity and irregularity in the amounts of drug dosage. In other words, the fluctuation of the drug dosage of from one to ten tablets a day would result in widely different heights of blood level, saturation and resultant pigment deposit.

EFFECT OF DRUGS ADDED TO ALCOHOLIC BEVERAGE

To the Editor:—1. What are the probable effects of adding a barbiturate to an alcoholic drink (i. e., doping a whisky and soda)? 2. What might be the expected results if a drink (alcoholic) was doctored with ¼ grain (0.016 Gm.) of a hypodermic tablet of morphine sulfate? morphine tartrate syrette? cocaine? 3. What might be the expected result if the doctoring agent was acetylsalicylic acid? 4. Are there any simple tests to determine what agent might have been used in a case of suspected doping of an alcoholic drink with a small quantity of the "doctoring agent" (to differentiate those listed in 1, 2 and 3)?

Capt. John E. Newland, M. C., United States Army.

ANSWER.—It is difficult to answer these questions specifically since the total dosage of the drug ingested and the quantity of alcohol imbibed are variants which influence the end result.

There is no satisfactory evidence to indicate that the addition of any of the substances mentioned to whisky and soda (the average 6 ounce [180 cc.] drink, representing a 10 to 15 per cent hydroalcoholic solution) would significantly alter the ordinary pharmacologic action of the various compounds. The soluble barbiturates and the salts of morphine and cocaine would dissolve and contribute a bitter taste to the solution which could be detected by the experienced drinker. Acetylsalicylic acid would dissolve with difficulty but would be more difficult to detect.

The barbiturates and morphine would summate with alcohol to contribute to its depressant effect at any level of dosage of the drug or quantity of alcohol imbibed and hence to reduce the quantity required to paralyze respiration.

In a general way cocaine would tend to antagonize the depressant effects of moderate quantities of alcohol and would contribute to the excitement stage. Any large quantity of this drug would contribute to cardiovascular failure because of its cardiotoxic action.

Acetylsalicylic acid in moderate quantities (up to 1 Gm.) would not have any characteristic additive or antagonistic action to alcohol. In large quantities it would probably contribute to an early circulatory collapse in the drunken state.

A simple, accurate chemical test for the substances in question is not available. Unless the correspondent is prepared to conduct rather elaborate chemical procedures, details of which may be found in any standard work on toxicology, it would be well to place the suspected material in the hands of a competent toxicologist, especially if such a case might have mediocolegal implications.

HYPNAGOGIC HALLUCINATIONS

To the Editor:—A young woman of a somewhat tense and nervous disposition complains of flashes of light or occasionally vivid visual hallucinations of faces or scenes which are prone to occur in the drowsy state which precedes sleep. This disturbance occurs especially when there has been much nervous stress and strain during the same day. Physical examination is negative. Please discuss the nature and significance of this phenomenon.

M.D., Illinois.

ANSWER.—Hallucinations are mental impressions of sensory vividness that occur without known external stimulus. They are distinguished from illusions, which are similar impressions depending on misinterpretations of an external stimulus.

Hallucinations may be psychogenic or physiogenic in origin. They may occur in toxic states and in brain lesions but most commonly are psychogenically induced. Hallucinations may occur on rare occasions in normal people.

The patient described in the query appears to have hypnagogic hallucinations that characteristically occur in the state just between sleeping and waking. They usually have an accompanying sensation of drowsiness, a characteristic dreamlike quality, and the person who experiences them usually realizes their hallucinatory nature. These are apt to occur at some time in the life of any persons and generally may be said to have psychologic significance similar to that attributed to dreams.

VENESECTION AND HYPERTENSION

To the Editor:—I should like an opinion with regard to venesection (500 cc.) in cases of essential hypertension. Is it ever indicated prior to the appearance of congestive failure with pulmonary edema? Is it ever used as a prophylaxis against impending cerebral hemorrhage?

M.D., Pennsylvania.

ANSWER.—Venesection in hypertensive disease is rarely indicated and frequently is emphatically contraindicated. In acute congestive heart failure with venous hypertension and pulmonary edema phlebotomy of 500 cc. may be a life saving measure as a temporary expedient while oxygen inhalation apparatus is being obtained and before rapid digitalization is possible. As criteria for determining impending cerebral hemorrhage are not adequate, venesection cannot be justified as a prophylactic measure. In the rare instances of arterial hypertension secondary to polycythemia vera, repeated venesections are legitimate and often useful.

Arterial hypertension, with the single rare exception of that associated with polycythemia, is not due to an abnormally large blood volume but to arteriolar constriction, either spastic or arteriolarsclerotic. In many instances hypertension is associated with anemia, often of considerable degree. In such cases therapy to correct the anemia commonly results in considerable reduction of the hypertension. Obviously, further exacerbation of such anemia by venesection is undesirable. The chronic damage done by hypertension arises from interference with the nutrition and respiration of parenchymatous cells. In hypertensive crises with anginoid pain or evidences of cerebral ischemia, vasodilating drugs are both safer and more effective than venesection. The hypertensive patient needs all the oxygen carrying capacity that an optimal hemoglobin content can give him.

INFECTION OF BARTHOLIN GLAND

To the Editor:—A married woman aged 40 has an acute cystic condition of the bartholin gland about ¾ inch (1.9 cm.) in diameter and 1½ inches (3.8 cm.) in depth. There is no history of trauma, and the patient denies any venereal history. The patient states that she had a hard dry stool, which caused her to do much straining in evacuating the bowel. The swelling of the bartholin gland appeared about four hours after straining took place. The patient was given 400,000 units of penicillin in divided doses in the first twenty-four hours after the swelling was noticed. This caused an immediate subsidence of all symptoms, except that the mass remained about the same in size. Would this quantity of penicillin sterilize the cystic content? What would be the possible etiology? Is excision of the affected gland the ideal solution?

M.D., California.

ANSWER.—It would be difficult to say whether the penicillin has sterilized the cyst. Since the patient does not give a history of venereal infection it would appear that the etiology would be a nonspecific infection. The ideal treatment is excision of the cyst.

MALE SEX HORMONE IN FUNCTIONAL UTERINE BLEEDING

To the Editor:—Can you tell me the physiologic action of male sex hormone in the treatment of functional bleeding in women?

Warren A. Lapp, M.D., Cincinnati.

ANSWER.—The exact physiologic action of the male sex hormone in the control of functional uterine bleeding is not known; but there are at least two factors involved, one of which concerns the myometrium and the other the pituitary gland. In the opinion of Sturgis, Abarbanel and Nader (*Am. J. Obst. & Gynec.* **39**:102 [Jan.] 1940) the action of testosterone is first of all inhibition of rhythmic intermittent contractility, thus lessening the volume flow of blood to the uterus. Second, by its direct action on the myometrial elements the volume flow of blood in the myometrium is reduced. The net results is a diminution in the flow of blood to the endometrium, with a consequent reduction in the amount of uterine bleeding. In commenting on this article, Greenhill (Year Book of Obstetrics and Gynecology, 1940, p. 513) remarks that this theory does not take into consideration the suppression of the pituitary gland by testosterone propionate with subsequent diminution of ovarian function, which may account for the control of uterine bleeding.

VITAMIN B COMPLEX AND ESTROGENS

To the Editor:—Does vitamin B complex suppress the estrogenic function in women and will its prolonged use hasten the menopause or upset the libido?

M.D., Columbia, South Carolina.

ANSWER.—Vitamin B complex has little direct effect on the secretion of estrogens or the physiologic action of these substances. The B vitamins do, however, have a significant effect on the maintenance of the proper balance of estrogens in the body through regulating the normal metabolic functions of the liver. Thus where the liver contains insufficient amounts of vitamin B complex the metabolic destruction of the estrogens is lessened, and a relative excess of estrogens circulating in the blood stream may occur which can induce certain changes in the tissues typical of hyperestrogenism. Among these changes are hyperplasia of the endometrium, cystic mastitis, abnormal uterine bleeding, premenstrual tension and amenorrhea (Biskind, M. S.; Biskind, G. R., and Biskind, L. H.: *Surg., Gynec. & Obst.* **78**: 49 [Jan.] 1944). When vitamin B complex is administered in large doses the liver regains its normal function of metabolizing estrogens, and these conditions are corrected. The prolonged use of vitamin B complex will not produce ovarian dysfunction and therefore will not hasten the menopause. It is doubtful that the libido would be diminished by the administration of B complex.

PREVENTION OF DERMATITIS IN RUBBER MANUFACTURE

To the Editor:—Many employees complain of what they call "rubber poisoning." This is a "carry-over" of old ideas among workers. How can I minimize contact dermatitis in rubber manufacturing plants?

Floyd M. Burgeson, M.D., Des Moines, Iowa.

Answer.—"Rubber poisoning" is a term applied by rubber workers to whatever illness or dermatitis they think is due to their occupational environment. Many of these conditions are not due to rubber or its compounds, and some of them are not even of occupational origin. The criteria for making a diagnosis of occupational dermatitis will be found in Schwartz, Louis, and Tulipan, Louis: Occupational Diseases of the Skin, Philadelphia, Lea & Febiger, 1939, pages 51-61.

The prevention of dermatitis in rubber manufacture has for its theme the prevention of contact with irritant chemicals. This is accomplished by efficient general and local ventilation devices, by furnishing the workers daily with clean protective clothing and by enforcing personal and environmental cleanliness. In some instances protective ointments may be of value.

Further information is given by Schwartz and Tulipan on pages 385-386, and by Louis Schwartz (Skin Hazards in the Manufacture and Processing of Synthetic Rubber, The Journal, Feb. 17, 1945, p. 389).

BLOOD PICTURE IN LATE PREGNANCY AND PUERPERIUM

To the Editor:—What are the accepted figures for hemoglobin content and red blood cell count for women in the ninth month of pregnancy and for the first two postpartum weeks?

Erwin Neter, M.D., Buffalo.

Answer.—Dieckmann and Wegner published the best available figures for the blood constituents in normal pregnancy:

	Hemoglobin	Cell Volume	Cell Count
38 weeks gestation	12 Gm.	38.3 per cent	4.23 million
2 weeks post partum	11.9 Gm	37.7 per cent	4.44 million

They found that there is a decline in the hemoglobin per hundred cubic centimeters of blood during pregnancy, reaching a maximum of about 15 per cent at the twenty-sixth to the thirty-fifth week of gestation. There is a comparable decrease in the hematocrit, which reaches a maximum of about 14 per cent. However, the total amount of hemoglobin and the total hematocrit increase during pregnancy as a result of the increase in total blood volume.

Reference:

Dieckmann, W. J., and Wegner, C. R.: Studies of the Blood in Normal Pregnancy: II. Hemoglobin, Hematocrit and Erythrocyte Determinations and Total Amount of Variations of Each, *Arch. Int. Med.* **53:** 188 (Feb.) 1934.

EFFECTS OF VASECTOMY AND LIGATION OF OVIDUCTS

To the Editor:—Please discuss the possible injurious effects (sexually or otherwise) of tying off the vas to prevent conception and of tying off the tubes in a case in which further pregnancies are definitely contraindicated. The man in the case fears aging of his faculties; the woman knows that abdominal section is not without danger.

Paul W. Van Metre, M.D., Rockwell City, Iowa.

Answer.—The only injurious effect in doing a bilateral vasectomy is that the man becomes sterile. At one time it was thought that a vasectomy improved the libido, but now investigators have definitely established that this is not true. The same statement applies to tying off the oviducts. There are some states, however, which have laws forbidding the sterilization of men, and it would be well to consult the laws of the state before any procedure is considered.

UNDULANT FEVER AND BLOOD SEDIMENTATION RATE

To the Editor:—Please discuss the effect of brucellosis in its various forms and stages on the sedimentation rate.

M.D., Georgia.

Answer.—The data that might supply even a fraction of the answer that is implicit in this question are not available. The little knowledge that is available suggests that the results of this nonspecific test, if they were to be accumulated in sufficient quantity, would not distribute in accordance with the recognized forms and stages of brucellosis but rather with relation to the location, size, nature and state of activation of regional brucella localizations which may occur in practically any tissue or organ the body, and at any stage of any recognized clinical form disease.

FECAL FISTULAS FOLLOWING APPENDECTOMY

To the Editor:—I have just operated on a patient who presented symptoms and signs postoperatively that lead me to believe that he had a "blowout" of his appendical stump following appendectomy. The appendix was not acutely inflamed but was adherent to the cecum, with its tip buried in the posterior parietal peritoneum. More than average difficulty was encountered in removing the appendix. The stump was buried without ligation with a Parker-Kerr stitch. On the second postoperative day he developed severe pain in the operative region and symptoms of localized peritonitis. On the fifth postoperative day he developed a fecal fistula. I have decided that the buried stump of the appendix "blew out" as the result of poor circulation on the wall of the cecum due to excessive manipulation in removing the appendix. What is the incidence of this sort of complication?

Thomas W. Kredel, M.D. Indiana, Pa.

Answer.—Postoperative fecal fistulas following appendectomy have resulted from (1) vascular thrombosis and infection of the cecal wall with necrosis, (2) pressure on the intestinal wall from drainage tubes and other objects, (3) cutting off of the blood supply to the cecum by tight purse-string sutures, (4) operative difficulties resulting in necrosis of the bowel and (5) other less common causes, such as blowing out of the appendical stump, inadvertently cutting the ligature of the stump or the purse-string suture or inflammatory or neoplastic diseases of the cecum.

There are three main surgical procedures for dealing with the stump of the appendix: (1) simple ligation, (2) ligation of the stump and inversion with a purse-string suture and (3) inversion of the stump without ligation. The generally accepted figure for fistulas following appendectomy with all procedures is roughly 4 per cent. Throughout the literature series have been reported in which the figures are both higher and lower. One report of 3,000 cases showed an incidence of only 1.4 per cent. Others range up to as high as 15 per cent. In 4,655 cases Deaver reported an incidence of 4.7 per cent, but these were mainly confined to those which had perforated and had abscess formation requiring drainage.

The case outlined in the query falls into a rather special classification. The fact that the appendix was not acutely inflamed and the fact that the stump was inverted without ligation would negate some of the causes of fistula formation. Statistics on this class are rare. The figures which would fit the case most closely are reported from Lexer's clinic by Burkle-de la Camp. In 3,200 cases of appendectomy performed by inversion without ligation of the stump, no fecal fistulas developed.

ANTHOCYANINURIA

To the Editor:—Can beets, especially Harvard beets, tint or color the urine a blood red?

M.D., New York.

Answer.—The ingestion of beets occasionally may cause the urine to be colored by an abnormal pigment. This condition, anthocyaninuria, may be confused with hemoglobinuria. This pigment, an anthocyanin, can be distinguished easily from blood by the fact that it is pink in acid and yellow in an alkaline solution. According to one study (Ruh, H. O., and Garvin, J. A.: *Ohio State M. J.* **20:**763 [Dec.] 1924) young beets, because of a greater pigment content, more frequently produce this effect than old beets. Anthocyaninemia may also occur, according to the authors mentioned. Other case reports of this condition are given by:

Mathison, Abe: Anthocyaninuria, abstr. *Am. J. Dis. Child.* **51:**226 (Jan.) 1936.
Poole, M. W.: Anthocyaninuria, *ibid.* **33:**784 (May) 1927.
Anthocyaninuria, *Bull. Soc. Pediat. de Paris* **36:**266, 1938; **37:**88, 1939.
Anthocyaninuria, editorial, The Journal, June 25, 1927, p. 2036.

HEMILATERAL PERSPIRATION

To the Editor:—What might make a man perspire on one side of his body and not on the other?

Paul R. Hahn, M.D., Racine, Wis.

Answer.—The inquirer does not state whether the entire side is affected or how long the trouble has been present; neither does he state clearly whether there is a lack of perspiration on one side or an increase on the other. If one entire side is affected, then the probability is that the trouble lies in the hypothalamus. If only part of that side is involved, especially the trunk and the extremities, the site of involvement may be with the cord. There may be an inborn developmental difficulty, in which case the sweat abnormality has been present during the entire lifetime of the individual. Under these circumstances it would be worth while to have the patient consult a neurologist. A few persons perspire freely over some localized site, usually on one side, after the ingestion of certain foods such as chocolate or nuts. Inquiry should be made concerning such relationship. Since desensitizing methods have not proved useful, the patient would have to give up any food incriminated.

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THE MANAGEMENT OF URTICARIA DUE TO PENICILLIN

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The most frequently encountered reaction to sodium penicillin administered parenterally is urticaria. Other reactions affecting the skin have been described, including "id" type reactions on the hands and feet, maculopapular eruptions of various types and erythema multiforme-like lesions.[1] It is our purpose in this paper to summarize our experience concerning the incidence of urticarial reactions during and after penicillin therapy, to cite cases demonstrating the unpredictability of this reaction and to report instances in which reacting patients could, and could not, tolerate continuance of penicillin therapy by the simultaneous administration of compounds having an antihistaminic effect.

Urticaria resulting from penicillin therapy was first reported by Keefer and his associates.[2] Dawson and Hobby[3] observed 3 instances of urticaria in the first 100 patients whom they treated with penicillin. They pointed out that the allergic response to penicillin might be due to impurities in the complex mixture, but this theory has not yet been confirmed or disproved.

Our experience indicates that (1) penicillin reactions are more frequently encountered in patients who have had repeated courses of this drug; (2) some patients who have had an urticarial reaction to penicillin may tolerate further penicillin therapy, while others may not; (3) skin tests with penicillin are unreliable as a means of predicting the occurrence of reactions to penicillin on further administration of the compound; (4) antihistamine compounds, particularly Benadryl,[4] are useful in controlling penicillin urticaria, and (5) urticarial reactions may at times be persistent and severe.

Allergic reactions of various types have been noted after the administration of a wide variety of drugs, and certain principles have been established on the basis of an enormous experience in this branch of dermatology and allergy. However, these principles are often disregarded in connection with new drugs, and this disregard may expose patients to unnecessary risks or may deny them treatment which might well be given with reasonable safety. An admirable summary of reactions to drugs has recently been published by Sulzberger and Baer,[5] and a review of some of the principles outlined by them will be helpful in the management of patients with reactions to penicillin. In particular, the following should be kept in mind: 1. Almost any chemical or biologic compound has some capacity to induce sensitization of various tissues of the body. 2. A reaction noted during or after exposure to a compound may not necessarily occur on reexposure. 3. Cutaneous reactions to a drug may vary considerably in appearance, though certain drugs have a pattern reaction which is the one most likely to be noted after their administration. 4. There is a variable period of incubation between the initial exposure to the drug and the demonstration of sensitivity to it; this period is almost never less than five days but may be as long as months or years. 5. Skin tests are often unreliable indicators of the patient's ability to tolerate further administration of the drug concerned. 6. There may be a considerable delay in the appearance of an eruption due to a drug after a patient's exposure to it, and, also, the eruption may persist for some time after withdrawal of the offending compound.

The antihistamine drugs, Benadryl and, more recently, Pyribenzamine,[6] constitute valuable additions to the methods of treatment of allergic reactions in general, and of urticarial reactions to penicillin in particular. Lowe,[7] Curtis and Owens,[8] Shaffer[9] and O'Leary and Farber[10] have all found Benadryl useful in the treatment of urticaria. Further experience will be required to demonstrate the full usefulness and limitations of these compounds. We are reporting herewith only our experience with them in urticaria due to penicillin; the results with a considerable series of patients afflicted with other allergic reactions involving the skin will be summarized elsewhere.

From the Institute for the Study of Venereal Disease of the University of Pennsylvania, John H. Stokes, M.D., director; and the Department of Dermatology and Syphilology, Donald M. Pillsbury, M.D., director.

The project of which this investigation forms a part is a cooperative undertaking between the United States Public Health Service and the University of Pennsylvania; financed by a grant in aid and directed by the Penicillin Syphilis Panel of the Hospital of the University of Pennsylvania, John H. Stokes, chairman.

1. Cormia, F. E.; Jacobsen, L. Y., and Smith, E. L.: Reactions to Penicillin, Bull. U. S. Army M. Dept. **4:** 694-702 (Dec.) 1945.

2. Keefer, C. S.; Blake, F. G.; Marshall, E. K.; Lockwood, J. S., and Wood, W. B.: Penicillin in the Treatment of Infections, J. A. M. A. **122:** 1217-1224 (Aug. 28) 1943.

3. Dawson, M. H., and Hobby, G. L.: The Clinical Use of Penicillin, J. A. M. A. **124:** 611-627 (March 4) 1944.

4. Beta-dimethylaminoethyl benzhydryl ether hydrochloride (Benadryl) supplied by Parke, Davis & Company, Detroit 32.

5. Sul[illegible] and Baer, R. L.: The 1945 Year Book of Der[illegible] Chicago, The Year Book Publishers, 1945, [illegible]

6. N'pyridyl-N'benzyl-N-dimethylethylenediamine hydrochloride (Pyribenzamine) supplied by Ciba Pharmaceutical Products, Inc., Summit, N. J.

7. Lowe, E. R.; Kaiser, M. E., and Moore, V.: Synthetic Benzhydryl Alkamine Ethers Effective in Preventing Fatal Experimental Asthma in Guinea Pigs Exposed to Atomized Histamine, J. Pharmacol. & Exper. Therap. **83:** 120-129 (Feb.) 1945.

8. Curtis, A. C., and Owens, B. B.: Beta-Dimethylamino-Ethyl Benzhydryl Ether Hydrochloride (Benadryl) in Treatment of Acute and Chronic Urticaria, Univ. Hosp. Bull., Ann Arbor **11:** 25-26 (April) 1945

9. Shaffer, L. W.; Carrick, L., and Zackheim, H. S.: The Use of Benadryl for Urticaria and Related Dermatoses, Arch. Dermat. & Syph. **52:** 243-245 (Oct.) 1945.

10. O'Leary, P. A., and Farber, E. M.: Benadryl in Treatment of Urticaria, Proc. Staff Meet., Mayo Clin. **20:** 423-429 (Nov. 14) 1945.

In the first 824 cases of syphilis treated with penicillin and followed at the Institute for the Study of Venereal Disease at the University of Pennsylvania, there were 15 cases of urticaria, an incidence of 1.8 per cent. Each of the 824 patients in this group received at least 1.2 million units of penicillin in 7.5 days or longer and returned to the clinic at regular intervals after the completion of treatment. It is our opinion that this incidence is increasing; 2 cases of urticaria were noted in the first 200 patients treated (November 1943 to August 1944), while treatment of the last 200 patients (October 1945 to May 1946) resulted in 12 cases of urticaria.

The 15 patients who had urticarial reactions all gave negative personal histories in regard to other manifestations of allergy. In 1 of these patients an urticarial eruption developed after each of his two 7.5 day courses of penicillin. In another patient there developed a morbilliform eruption on the fifth day of her first course of treatment. Seven patients acquired urticaria after the second course of penicillin, following an uneventful first course; 5 had hives during or after the third course of treatment, who had no reaction during the preceding two courses, and 1 patient tolerated three courses without incident, only to have urticaria develop shortly after the fourth course was completed.

The cases of certain patients whose varying clinical courses illustrate basic principles underlying the interpretation and management of reactions to penicillin are cited in the following reports.

REPORT OF CASES

Readministration of penicillin after a severe urticarial reaction to it may not be followed by recurrence of the urticaria on reinjection of a full therapeutic dose of penicillin.

CASE 1.—W. D., a Negro man aged 53, was under treatment for meningovascular syphilis, diabetes mellitus and hypertensive cardiovascular disease. He had no personal or familial history of allergic diseases. In the treatment of his syphilitic infection he was given 1.2 million units of sodium penicillin in isotonic sodium chloride solution over a period of eight days in November 1943; a second course of 2.4 million units in eight days in July 1944, and 1.2 million units in 7.5 days in April 1945. Considerable clinical improvement was noted, but because of a persistently positive spinal fluid, grade II, he was readmitted to the hospital Feb. 6, 1946 and received 4.8 million units of sodium penicillin in 7.5 days. Twenty-four hours after discharge on Feb. 13, 1946, there developed large urticarial wheals which were distributed over the entire body. He was readmitted to the hospital on Feb. 15, 1946. Biopsy of one of the cutaneous lesions showed a typical histologic picture of urticaria. The patient was given 100 mg. Benadryl by mouth and was entirely relieved of his pruritus in forty-eight hours. The administration of Benadryl was continued in a dose of 100 mg. orally three times a day; there were only a few wheals remaining in eight hours, and in forty-eight hours there was no evidence of urticaria. On Feb. 17, 1946 the patient was tested by the intradermal injection of 0.1 cc. of isotonic sodium chloride solution containing 1,000 units of penicillin. A zone of erythema 1.2 cm. in diameter was noted at the site of the injection containing the lot of penicillin originally administered to the patient; injection of another lot of penicillin in the same concentration produced an erythematous zone 0.5 cm. in diameter. On the same day the patient was given 1,000 units of penicillin intramuscularly, without reaction. On the following day 40,000 units were administered, without return of pruritus or urticaria.

CASE 2.—D. R., a white man aged 52, was under treatment for tabes dorsalis and received his first course of penicillin in March 1945. He was given 2.4 million units of sodium penicillin in eight days without reaction. Because of persistent tabetic pains he was readmitted in January 1946 and started on 40,000 units of sodium penicillin dissolved in isotonic sodium chloride solution every three hours. On the twelfth day, after the patient had received 3.4 million units, typical urticarial lesions developed, and there was a concomitant, cramping abdominal pain. Penicillin therapy was immediately discontinued, and Pyribenzamine, 50 mg. three times a day, was administered orally. The latter was discontinued after the second dose, because of the vomiting associated with the urticarial reaction. Large gyrate urticarial lesions were present over the entire body three days after the onset, and the vomiting continued. The patient was then given 10 mg. of Benadryl intravenously, following which he became extremely drowsy, and the urticarial lesions were less pronounced. The following morning Benadryl was administered by mouth in a dosage of 100 mg. three times a day. There was no evidence of urticaria two days later, and Benadryl administration was discontinued without recurrence of the lesions. On the sixth day after the onset of urticaria a placebo injection was given without reaction, and on the eighth day 1,000 units of sodium penicillin of the original lot was given without reaction. On the tenth day the patient received 5,000 units, then 40,000 units; the following day he returned to a dosage of 40,000 units every three hours until 1,400,000 units had been received. There was no recurrence of urticaria, pruritus or abdominal pain, in spite of the fact that he was receiving no antiallergic treatment and was being given the original dosage of the same lot of penicillin that apparently caused his allergic reaction.

It is sometimes possible to continue penicillin therapy in a reacting patient by the simultaneous administration of penicillin and an antihistamine compound.

CASE 3.—H. S., a white man aged 50, was first admitted to the hospital May 13, 1944 for treatment of tabes dorsalis. Two and four-tenths million units of sodium penicillin were administered in a period of nine days, without immediate or delayed reaction. The patient was retreated in March 1945 with 2.4 million units of penicillin given over ten days, again without reaction. Because of recurrence of lightning pains, the patient was readmitted to the hospital on March 5, 1946 for additional treatment. From this date until March 12, the patient received 40,000 units of penicillin every three hours. At 9 p. m. on that date there suddenly developed generalized giant urticarial lesions. Penicillin therapy was discontinued, and in eighteen hours the patient's pruritus had diminished but some urticarial lesions were still present. At 3 p. m. on March 13 a test dose of 40,000 units of sodium penicillin was administered intramuscularly. Severe pruritus recurred promptly, and the urticaria become more pronounced. On March 14 the patient was given Benadryl, 100 mg. three times a day by mouth, and penicillin was readministered in a dosage of 40,000 units every three hours. The urticaria disappeared, and the patient tolerated continued penicillin therapy well. On March 18, 1946, the amount of Benadryl was reduced to 150 mg. a day and the dosage of penicillin was maintained at 40,000 units every three hours. The urticaria promptly recurred, and the patient's temperature rose to 102 F. On March 19 the dosage of Benadryl was increased to 300 mg. daily, and again the urticarial lesions disappeared. On March 21 it was again reduced to 150 mg. daily, but there was no recurrence of the urticaria. On March 22 all treatment was discontinued, and the patient did not acquire hives during several weeks of observation thereafter.

Intradermal tests with solutions containing 1,000 units of penicillin in 0.1 cc. were performed. The skin showed no reaction in twenty minutes, twenty-four hours and forty-eight hours to the original lot of penicillin used or to several other lots of penicillin.

Urticarial reactions to penicillin are sometimes not controlled by the administration of Benadryl, may be accompanied by severe gastrointestinal symptoms and may be reprecipitated by the administration of small amounts of penicillin.

CASE 4.—F. M., a white woman aged 50, was under treatment for tabes dorsalis. She gave no personal or familial history of allergic diseases. The initial treatment with penicillin was administered in July 1944, and 3 million units were given in ten days without reaction. Subsequent to this treatment the patient showed considerable improvement but because of a persistently positive spinal fluid was admitted to the hospital for further penicillin therapy on Nov. 30, 1945 and scheduled to receive a total dose of 7 million units. On Dec. 9, 1945, after 5.2 million units had been administered, a generalized severe urticaria was noted, and treatment with penicillin was discontinued. Twenty-four hours later the urticaria had not improved, and treatment with Benadryl, 300 mg. daily by mouth, was started. There was no lessening of the urticaria twenty-four hours later. Shortly thereafter, abdominal pain, nausea and vomiting developed which were aggravated by the taking of any food, liquid or drug by mouth. Benadryl for intravenous administration was not available, and the patient was treated with epinephrine hypodermically, calcium gluconate intravenously and phenobarbital by mouth, with no effect on the urticaria or vomiting. The urticaria gradually disappeared within a week, and the patient felt entirely well. Nine days after the onset of her reaction, 1,000 units of penicillin from the same lot as that previously used was administered. Two and one-half hours later urticarial lesions reappeared, but there was no nausea or vomiting. On the following morning, when the hives had disappeared, 3,000 units of penicillin were given. Six hours later, the patient observed the development of edema of the lips, but this reaction was not as severe as that following the previous injection of 1,000 units. The lesions cleared up promptly. Further penicillin therapy was not attempted. Skin tests, using 0.1 cc. isotonic sodium chloride solution containing 1,000 units, were performed. Penicillin of the same lot as that used previously on the patient produced erythema 0.5 cm. in diameter in thirty minutes; that from another lot produced erythema 4.0 cm. in diameter, and no reaction resulted from tests with two other lots of penicillin. Intradermal injection of human serum containing 0.1 unit of penicillin per cubic centimeter from a patient receiving penicillin produced no reaction. All twenty-four hour readings were negative.

An urticarial reaction to penicillin therapy may be severe, may be accompanied by asthma, may respond only moderately to Benadryl or Pyribenzamine therapy and may be followed by ecchymoses and uterine bleeding of undetermined cause.

Case 5.—M. D., a white woman physician aged 31, was first seen at the request of Dr. I. S. Ravdin on April 7, 1946 by Dr. Malcolm Spencer and one of us (D. M. P.) because of severe urticaria, laryngeal edema and asthma developing during prophylactic penicillin therapy following an operation on the left knee. The course of the patient's illness was severe and alarming and the cause of a subsequent hemorrhagic reaction was obscure; the history and clinical course are therefore recorded herewith in some detail.

The patient had been in generally good health, except that at the age of 16 she had undergone a dilatation and curettage because of dysmenorrhea associated with excessive uterine bleeding. This procedure was repeated in August 1945 because of similar symptoms. Sections of the endometrium taken on both occasions were reported to be normal on histologic examination. Further pertinent details may be outlined in chronologic order, as follows:

September 1945. Angioneurotic edema of the perioral region developed following the taking of a total of 360,000 units of penicillin by mouth during a period of three days, because of an infection of the upper part of the respiratory tract associated with diarrhea. The angioneurotic edema disappeared promptly on cessation of penicillin therapy.

March 8, 1946. The patient sustained a fracture of the medial semilunar cartilage in an automobile accident.

March 29, 1946. A medial meniscectomy of the left knee was performed. Prophylactic penicillin therapy in the amount of 30,000 units every three hours, intramuscularly, was started.

April 7, 1946. After eight days of satisfactory progress, there developed in the patient severe generalized urticaria, with several paroxysms of asthma. Penicillin therapy was suspended, and the patient was started on Benadryl in a dosage of 100 mg. three times a day.

April 8 and 9, 1946. The patient continued to have urticaria, laryngeal edema and asthma, for which a number of injections of epinephrine were required for relief.

April 10, 1946. Benadryl was adjudged to have been ineffective, and treatment with Pyribenzamine, 100 mg. by mouth three times a day was started. There was possibly some improvement in the urticaria, but the patient continued to have asthmatic attacks between 10 p. m. and 3 a. m.

April 11, 1946. The dosage of Pyribenzamine was increased to 50 mg. every four hours, around the clock. The asthmatic attacks disappeared, but occasional hives persisted.

April 12, 1946. The dosage of Pyribenzamine was increased to 75 mg. every four hours.. The urticaria remained troublesome, and on April 13 the dose was increased to 100 mg. every four hours. Complete freedom from asthma and urticaria occurred. There were no apparent untoward side effects from Pyribenzamine.

April 14, 1946. Because of shortage in the supply of Pyribenzamine, the dosage was reduced to 50 mg. every four hours. Urticaria shortly recurred. On April 15 the dosage was increased to 75 mg. every four hours, and this apparently relieved the urticaria. The patient was discharged from the hospital.

April 17, 1946. The dosage of Pyribenzamine was reduced to 50 mg. every four hours, and urticaria recurred.

April 18, 1946. Benadryl, 10 mg. in 20 cc. isotonic sodium chloride solution, was administered intravenously. Urticarial lesions disappeared almost immediately, and the patient slept for ninety minutes.

April 19, 1946. The patient resumed Pyribenzamine therapy, 100 mg. every four hours. The dose was then gradually reduced, and on April 23 Pyribenzamine was discontinued entirely, although occasional small hives were still being noted.

Benadryl and Pyribenzamine in the Treatment of Urticaria Due to Penicillin

	Total Cases Treated	Relief with Dose of 50-100 Mg. Three Times a Day	No Relief
With benadryl	16	14	2*
With pyribenzamine	7	2	5

* These patients received one dose of 10 mg. of benadryl intravenously, with temporary relief.

April 24, 1946. While visiting her home in another city, the patient noted vaginal bleeding which required three to four pads in twenty-four hours. The last previous menstrual period had started on April 10. The vaginal bleeding continued and on April 26 the patient also noted tarry stools, coffee-brown vomitus, epistaxis, gross hematuria, generalized ecchymoses and bleeding from the gums. On the following day the patient was seen by her home physician; the bleeding time was fourteen minutes, the hemoglobin content was 58 Gm. per hundred cubic centimeters and there were 13,700 white blood cells with 90 per cent polymorphonuclear leukocytes. Five hundred cc. of whole blood was administered. The bleeding gradually diminished. The patient was also given vitamin K, 5 mg. three times a day, intramuscularly and ascorbic acid 100 mg. twice a day intravenously. On April 30 a bleeding time of four minutes and hemoglobin level of 70 Gm. per hundred cubic centimeters was reported.

May 1, 1946. The patient was again seen by us and studied by Dr. Adolph Creskoff of the hematology department. At that time the hematologic findings were normal.

On May 3 the patient again noted profuse vaginal bleeding, had one bout of hematemesis, epistaxis and one tarry stool. It became necessary to pack the uterus and to administer three transfusions of 500 cc. of whole blood each between this date and May 8. When last seen May 25, 1946, the patient had apparently recovered entirely.

COMMENT

The etiology of this patient's bleeding is not clear, but it would seem that it was definitely related either to her reaction to penicillin or to the drugs used to combat this reaction. Proof of the cause of the bleeding could have been determined only by the experimental administration of penicillin, Benadryl and Pyribenzamine, but such a procedure was not considered justifiable in view of the severity of the reaction which the patient had experienced.

The overall experience with Benadryl and Pyribenzamine in the treatment of urticaria due to penicillin is summarized in the accompanying table.

SUMMARY

Urticarial and other allergic reactions to penicillin at times constitute a serious bar to continuance of treatment with this compound. It is to be expected that as more persons receive repeated courses of penicillin a higher incidence of reactions will be observed. This, in our opinion, is another of the several reasons for the use of penicillin only on adequate medical indications.

The prognosis in any particular urticarial reaction to penicillin in regard to both the duration of the attack and the likelihood of its recurrence on readministration of penicillin is difficult to make. The antihistamine drugs, Benadryl and Pyribenzamine, are often of great value in the control of urticaria due to penicillin, and it is sometimes possible to continue the administration of penicillin by the simultaneous administration of one of them.

On the basis of general principles applicable to allergic reactions to drugs and of our experience with urticaria due to penicillin, the following scheme of management of such reactions is suggested:

1. Stop the administration of penicillin immediately, except possibly in occasional instances in which there is an immediate critical need on the part of the patient for the drug.

2. Administer Benadryl or Pyribenzamine in a dosage of 50 to 100 mg. three times a day by mouth to adult patients. The effectiveness or lack of effectiveness of such treatment will ordinarily become apparent within twelve hours. It may be necessary to administer the antihistamine compound as frequently as every four hours, around the clock. If the reaction to penicillin is severe or if it is desired to attempt its administration without interruption, the intravenous administration of Benadryl in a dosage of 5 to 10 mg. given slowly in 20 cc. isotonic sodium chloride solution is advised. The hypnotic effect of its intravenous administration is often decidedly startling, and we are not convinced that it does not possibly have some dangerous potentialities.

3. If the urticaria and accompanying symptoms subside, a test dose of 1,000 units of another manufacturer's penicillin may be administered intramuscularly, provided that facilities for the administration of epinephrine or of Benadryl intravenously are at hand. It is recommended that administration of an antihistamine drug by mouth be continued during this period.

4. If there is no reaction to the test dose within six hours, another dose of between 10,000 and 20,000 units may be given. Provided no reaction is evident within four hours, the administration of penicillin may be resumed in full therapeutic doses, with continued administration of the antihistamine compound.

5. The dosage of Benadryl or Pyribenzamine may be reduced gradually over the next two or three days. If the urticarial reaction recurs, the dose of antihistamine drug should be increased to the level previously found effective. However, in some patients it will be possible to discontinue such drugs entirely while continuing the administration of penicillin.

6. During the period of trial administration of penicillin, the use of compounds which delay the absorption of penicillin and maintain the level of penicillin in the serum for prolonged periods of time, e. g. penicillin in peanut oil and beeswax, is not advised. Penicillin in a form which will be rapidly excreted, should a reaction occur, is preferable.

7. Should readministration of penicillin be found impossible and should further penicillin therapy be considered highly advisable, as in syphilis, for instance, another attempt at readministration one or more months later may be successful. It is obvious that this should be carried out cautiously, with the patient under close observation.

8. The prospective wider availability of crystalline penicillin fractions and of improved antihistamine compounds should shortly make the knowledge of the etiology of reactions to penicillin more exact and the means of preventing and treating them more effective. The problem is one of increasing importance and deserves careful study by laboratory and clinical scientists and by manufacturers of penicillin.

THE PROBLEM OF VENOUS THROMBOSIS

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Of all complications relative to surgical operation, delivery or illness requiring medical management, venous thrombosis which results in permanently disabling venous obstruction or fatal pulmonary embolism stands as the most distressing.

It has only been within the past few years that the problem of venous thrombosis has been understood. Homans [1] and Ochsner and DeBakey [2] have divided intravascular clotting into two types: (1) a bland thrombosis or phlebothrombosis and (2) thrombophlebitis. With this division a more rational method of management may be instituted.

Because of a number of factors [3] the condition of intravascular clotting is apparently on the increase. The greater number of operative interventions that are now being performed and the increase in the magnitude of present day surgical practice are the most logical reasons. This view has been stressed by Matas.[4] It was formerly thought that this condition developed only in patients who had undergone surgical intervention, but the work of Burke [5] and others [6] has shown that it occurs almost as frequently in patients receiving medical treatment.

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Read before the Section on Surgery, General and Abdominal, at the Ninety-Fifth Annual Session of the American Medical Association, San Francisco, July 3, 1946.

[1] Homans, J.: Thrombosis of the Deep Veins of the Lower Leg. Causing Pulmonary Embolism, New England J. Med. **211**: 993-997 (Nov. 29) 1934.

[2] Ochsner, A., and DeBakey, M.: Thrombophlebitis, J. A. M. A. **114**: 117-124 (Jan. 13) 1940.

[3] Ochsner, A., and DeBakey, M.: Thrombophlebitis and Phlebothrombosis, South. Surgeon **8**: 269-290 (Aug.) 1939.

[4] Matas, R.: Postoperative Thrombosis and Pulmonary Embolism, Univ. Toronto M. Bull. **10**: 1, 1932.

[5] Burke, M.: Thrombosis: A Medical Problem, Am. J. M. Sc. **196**: 796-814 (Dec.) 1938.

[6] Hunter, W. C.; Krygier, J. J.; Kennedy, J. C., and Sneeden, V. D.: Etiology and Prevention of Thrombosis of the Deep Leg Veins, Surgery **17**: 178-186 (Feb.) 1945.

ETIOLOGY

There are numerous factors which contribute to the development of venous thrombosis. Faure[7] found a greater instance during the winter months, especially when grippal infections were most prevalent. Also, more cases have been reported in Northern states than in Southern states. This fact could be attributed to the greater incidence of the infections of the upper part of the respiratory tract in the northern section of the country. Burke[5] emphasized a familial or constitutional tendency, and he noted the occurrence more frequently in asthenic, adipose types and in those persons who are hypothyroidic, overweight or weak muscled. Trosseau[8] noted the frequency of venous thrombosis that developed in patients with wasting diseases such as tuberculosis and especially cancer.

There are many plausible theories as to the development of venous thrombosis. The theory suggested by Frykholm[9] seems to have special merit: that when a patient lies in bed for some period of time the veins of the lower extremities are collapsed by the pressure of the leg against the mattress, with the result that the endothelial cells lining the venous wall may adhere to one another. The injured cells may become defective, roughened or torn loose, or thrombocytes and leukocytes may adhere to them; in either case these cells will act as a nidus for a thrombus. If this happens in a small vessel, it may easily be occluded. It is known that the leukocytes follow along the wall of the vessel, whereas the red blood cells are usually arranged in the middle of the stream.

Ochsner[10] suggested that vasospasm retards the flow of the blood in the lower extremities. The vasospasm may be due to the use of tobacco or to trauma such as that seen in fractures in which the vessel wall or surrounding tissues are injured. Circulatory retardation may be produced by posture, such as Fowler's position after abdominal surgery, in which the thighs are partially flexed on the abdomen and the legs on the thighs, causing a pooling of the blood in the popliteal veins. Immobility of the diaphragm caused by tight strapping of the abdomen after an abdominal operation and an increase in abdominal tension produced by intestinal gases may be factors. Ochsner and DeBakey[11] have also shown that after a surgical operation there are changes in the constitution of the blood which may be important in the occurrence of venous thrombosis. The changes in the plasma are an increase in its viscosity, hyperglobulinemia, hypoproteinemia and an increase in the fibrogen and calcium content. There are also changes in the formed elements of the blood, which consist of an increase in the number of thrombocytes and leukocytes and in their tendency to agglutinate.

Intravascular clotting is more frequently encountered in advancing age, as was shown by Allen and his co-workers,[12] who stated that 81 per cent of their cases were in patients over 40 years of age.

Barker and Priestley[13] of the Mayo Clinic in a review of 1,665 consecutive cases of postoperative venous thrombosis, pulmonary embolism and thrombophlebitis found that these complications occurred after 0.96 per cent of all operations and 2 per cent of all laparotomies and that this figure was increased to 3 per cent if the surgical procedure was performed on the female pelvis. It was further shown by these authors that patients with the following conditions were more prone to have these complications: carcinoma, disease of the peripheral veins, serious infections, cardiac diseases and hematic dyscrasias. These men stress the fact that patients with such conditions should have all precautionary measures instituted to prevent these complications when surgical intervention is contemplated.

In the opinion of most authorities[11] the site of the thrombus in phlebothrombosis is in the plantar veins or the veins of the calf muscles. In this case there is little or no inflammatory change in the vessel wall or in the vascular endothelium, but because of stasis and other factors previously mentioned there occurs the formation of a thrombus, which is similar to an extravascular clot in that it has a red color due to the presence of a high percentage of erythrocytes. Since the wall of the vessel is not involved the thrombus, which is exceedingly fragile, can easily become detached, especially when it gradually builds up and the end projects into a larger vessel. It is such a condition as this which frequently produces fatal pulmonary embolism when a patient first gets out of bed after an operation.

In thrombophlebitis there are maximum changes in the vessel wall which are produced by trauma to the wall, infection or, as Karsner[15] and Homans[16] have indicated, a perivenous lymphangitis. The deep portion of the femoral iliac system is the most frequently involved. Aschoff[17] considers that there is a deposition and agglutination of platelets on the injured vessel wall. Leukocytes and fibrin are also attached, producing a firm thrombus that is adherent to the wall. Such a thrombus as this is not so likely to become dislodged and produce pulmonary embolism.

CLINICAL MANIFESTATIONS

It is imperative that if adequate treatment is to be instituted, the clinical manifestations of each type of venous thrombosis be understood.

Phlebothrombosis.—As has been mentioned previously, a thrombus as a rule develops in the plantar veins or the veins of the calf muscles. From there it will extend into the popliteal and deep veins of the thighs and pelvis. At first there may be little or no evidence of involvement of the extremity. There may be only tenderness of the plantar surface of the foot or around the external malleolus or over the calf muscles. Veal and Hussey[18] stressed a localized tenderness over the veins of the lower part of the leg. Dorsal flexion of the foot with the leg extended (Homan's sign) was positive in a large percentage of patients in the University Hospital. An increase in the pulse rate is also a common observation. There may be no elevation of any importance in the temperature, unless it is produced by some concurrent condition. However, Allen, Linton and Donaldson [19] have stated that when a patient's chart shows a rise in the pulse rate, temperature and respiratory rate, it is strongly indicative of phlebothrombosis with a pulmonary embolism (figs. 1 and 2). The patient is often extremely nervous; he has an anxious look of impending danger. Edema of the foot and leg is seen in about 60 per cent of such cases, and when it is present postoperatively the patients should be carefully examined for indications of phlebothrombosis.

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[7] Faure, J. L.: Du traitement préventif des phlébites, Bull. et mém. Soc. nat. de chir. **53**: 532, 1927.

[8] Trosseau, A., cited by Sproul, E. E.: Carcinoma and Venous Thrombosis, Am. J. Cancer **34**: 566-585 (Dec.) 1938.

[9] Frykholm, R.: The Pathogenesis and Mechanical Prophylaxis of Venous Thrombosis, Surg., Gynec. & Obst. **71**: 307-312 (Sept.) 1940.

[10] Ochsner, A.: Intravenous Clotting, Surgery **17**: 240-263 (Feb.) 1945.

[11] Ochsner, A., and DeBakey, M.: The Significance of Phlebothrombosis and Thrombophlebitis, J. Bone & Joint Surg. **23**: 788-794 (Oct.) 1941.

[12] Allen, A. W.; Linton, R. R., and Donaldson, G. A.: Venous Thrombosis and Pulmonary Embolism, J. A. M. A. **128**: 397-403 (June 9) 1945.

[13] Barker, N. W., Nygaard, K. K.; Walters, W., and Priestley, J. T.: A Statistical Study of Postoperative Venous Thrombosis and Pulmonary Embolism, Proc. Staff Meet., Mayo Clin. **15**: 769-773 (Dec. 4) 1940.

[14] Homans, J.: Pulmonary Embolism Due to Quiet Venous Thromboses and Simulating Cardiac and Pulmonary Disease, New England J. Med. **229**: 309-314 (Aug. 19) 1943.

[15] Karsner, H. T.: Human Pathology, Philadelphia, J. B. Lippincott Company, 1943.

[16] Homans, J.: Deep Quiet Thrombosis in the Lower Limb, Surg., Gynec. & Obst. **79**: 70-82 (July) 1944.

[17] Aschoff, L.: Thrombosis, in Lectures on Pathology, New York, Paul B. Hoeber, 1924.

[18] Veal, J. R., and Hussey, H. H.: Surgery of the Deep Venous Thrombosis of the Lower Extremity, Surgery **17**: 218-231 (Feb.) 1945.

Sudden, sharp pain in the chest as a result of a pulmonary embolism was the first indication of phlebothrombosis in 41 per cent of patients in a series studied by Allen and his co-workers.[19] If the emboli are small, they may produce only pleuritis or substernal pain, faintness, coughing or bloody sputum; if they are massive, they may result in sudden death (figs. 3 and 4). Veal and Hussey [18] have shown that there is no period of safety from pulmonary emboli for a patient at any time from one day to four months after their formation if phlebothrombosis is present.

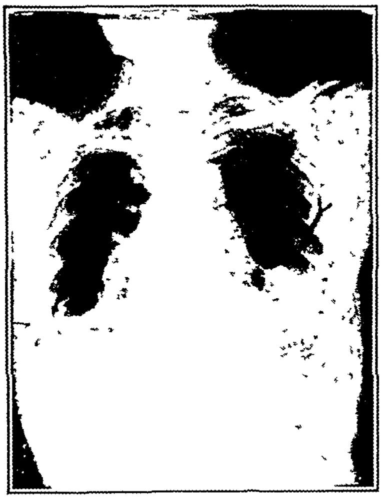

Fig. 1 —In a patient aged 68 with carcinoma of the prostate, the roentgenogram reveals a healing infarct at the base of the right lung and a recent infarct at the base of the left lung Bilateral superficial femoral ligation is present

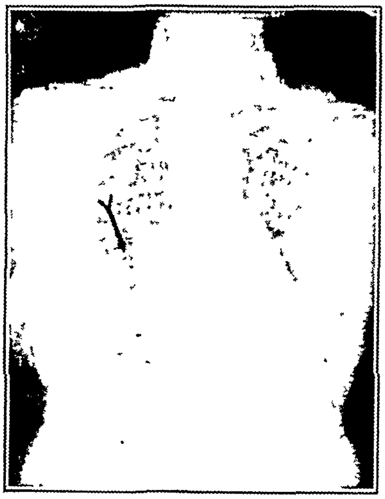

Fig 2 —In a patient aged 64, with rheumatic heart disease, the roentgenogram shows a pulmonary embolism at the base of the right lung.

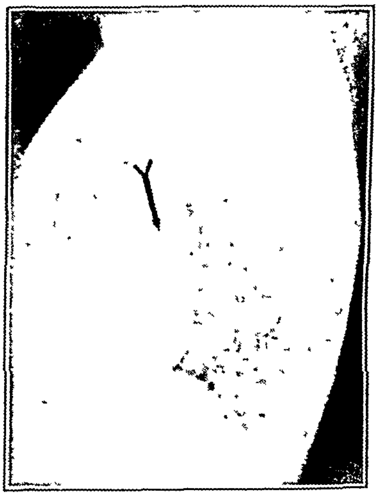

Fig 3 —Lateral view of patient in figure 2 shows triangular area of infiltration typical of pulmonary embolism.

Allen, Linton and Donaldson [19] found that the lower lobes of the lungs were involved more frequently than the upper; as a matter of fact, in 96 per cent of their cases this observation assisted in making a differential diagnosis (figs. 5 and 6).

There is no satisfactory method of determining when the process has propagated far enough to involve the femoral or iliac veins. However, Homans [16] has suggested that cyanosis of the extremity, especially when it is tender and when the collateral veins of the skin are disturbed, practically always means that the deep vascular system is involved. It is in such conditions as this that phlebography [20] may be of assistance.

Thrombophlebitis.—There is much discussion at this time whether thrombophlebitis begins in the femoral-iliac system and extends to involve the deep venous system or whether it begins in the plantar and calf-muscle veins and extends to involve the femoral-iliac system. According to Homans,[16] Ochsner and DeBakey [3] and Fine and Sears,[21] it is the full, obstructing type of thrombosis accompanied by a decided perivascular inflammation with swelling of the inguinal lymph nodes. Since there is involvement of the wall of the vein, there is less likelihood of the formation of pulmonary emboli. When they do occur they are, as a rule, of the septic type. The thigh and the extremity are usually noticeably swollen and edematous, and when the superficial veins are dilated the iliac system is also involved. In about 5 per cent of the cases the process involves the superficial system, in which event there may be little edema. Since there is an infection present, there is an accompanying rise in temperature and in the leukocyte count. If the temperature curve is of the picket-fence type associated with chills, a suppurative condition will be found to be present. Pulsation of the arteries of the involved extremity will be of poor quality. The edema, pain and poor arterial pulsations were shown by Leriche,[22] Ochsner and DeBakey [2] to be caused by vasospasm.

TREATMENT

Prophylaxis of Venous Thrombosis.—The best form of treatment for venous thrombosis is prevention. It was mentioned earlier in this paper that patients manifesting certain conditions were more prone to the development of this complication; it is not amiss to mention again these conditions and express the need for caution when they are present: carcinoma, disease of the peripheral veins, cardiac diseases, serious infections, hematic dyscrasias and trauma.

In the University Hospital the residents and nursing staff are taught to examine carefully the lower extremities of all surgical patients or medically ill older

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19. Allen, A. W.; Linton, R. R., and Donaldson, G A · Thrombosis and Embolism, Ann. Surg. **118**: 728 740 (Oct.) 1943

20. Starr, A ; Frank, H. A., and Fine, J.: The Venographic Diagnosis of Thrombophlebitis of the Lower Extremities, J. A M. A. **118**: 1192-1195 (April 4) 1942. DeBakey, M.; Schroeder, G. F., and Ochsner, A.: Significance of Phlebography in Phlebothrombosis, J. A. M. A. **123**: 738-744 (Nov. 20) 1943.

21. Fine, J., and Sears, J. B.: The Prophylaxis of Pulmonary Embolism by Division of the Femoral Vein, Ann. Surg. **114**: 801-812 (Nov.) 1941.

22. Leriche, R.: Sur l'importance de la périphlébite dans la genèse des accidents tardifs consecutifs aux obliterations veineuses, Bull. et mém. Soc. nat. de chir. **53**: 561-565 (April 16) 1927.

patients twice a day, to palpate the plantar surfaces of their feet and their calf muscles and to note the presence of edema or dilatation of the superficial veins and the presence of pain in the muscles of the sole or calf. Any postoperative pain in the chest is immediately investigated to be sure that it is not the result of an embolism from a silent venous thrombosis. The surgical patients and the older age group of medical patients who are required to remain in bed are instructed to move their lower extremities as much as possible. As Wangenstein said, a thousand times a day is not too much. De Takats and Fowler[23] and Ochsner and DeBakey[3] have stressed dorsal flexion and plantar flexion of the feet. The patient is encouraged to breathe deeply; tight abdominal bindings are not permitted because they prevent deep breathing. Postoperative distention should be prevented; dehydration should be combated with an adequate intake of fluids; sufficient heat should be applied to the body to prevent chilliness, which may produce vasospasm and influence venous thrombosis.

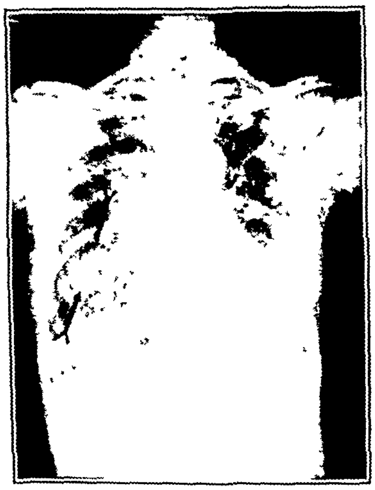

Fig 4.—Arteriosclerotic heart disease with cardiac decompensation, in patient aged 55, gives roentgenologic evidence of a pulmonary infarct in the lower lobe of the right lung

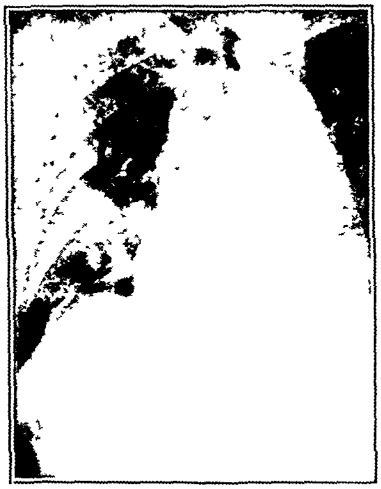

Fig. 5—In a patient aged 53, with rheumatic cardiovascular disease, a left oblique view of the chest reveals a triangular area of infiltration typical of infarct in the lower lobe of the right lung.

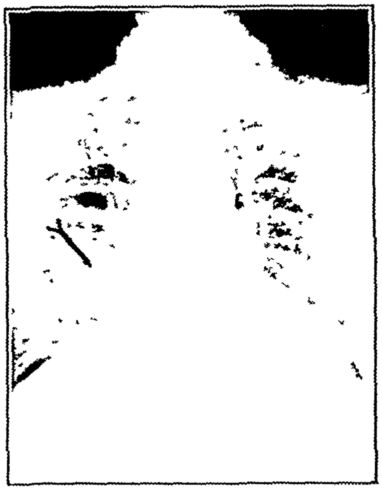

Fig 6—Roentgenogram of patient in figure 5 showing a pulmonary infarct in the lower lobe of the right lung.

Treatment of Phlebothrombosis.—When phlebothrombosis is present, or when a pulmonary embolus has developed from a silent thrombus, the most rational treatment is thrombectomy and ligation of the vein above the thrombus. This form of treatment was first used by Homans[1] and has been popularized by him and many others;[24] in fact, it is the accepted treatment for this serious condition.

Since the majority of thrombi have their origin in the veins of the feet or calf muscles, it is well to institute surgical treatment before the thrombus has propagated itself to involve the femoral or higher veins. By so doing the postoperative convalescence will be more satisfactory. Also, there will be less likelihood of the development of pulmonary emboli.

In early cases the site of ligation which we have found to be most advantageous is the superficial femoral below the profundi femoris. This site was popularized by Allen,[25] Linton and Donaldson.[10] In this area there are few muscle branches, the vein is readily accessible and there is a sufficient segment with which to work safely. Thrombi can easily be removed from the proximal and distal segments of the vein.

Operative Technic.—The technic which we employ operatively is essentially that which was advocated by Allen[10] and his co-workers[12] and Homans.[16] It is as follows:

Under local, Pentothal sodium or low spinal anesthesia a 4 inch (10 cm.) incision is made beginning below the crease of the groin and parallel to the pulsating femoral artery. The skin edges are carefully protected with towels. The incision is carried down to the vascular bundle; the femoral sheath is opened. The branches of the femoral nerve lie lateral to the femoral artery and vein. The femoral artery overlies the vein in this region. The artery is freed sufficiently, so it can be retracted laterally, and this is done gently. The superficial femoral vein now comes into view. If it is thrombosed it may adhere slightly to the femoral artery and surrounding tissues, in which event a higher ligation is done. The saphenous veins and venae profundae femoris should be identified. The superficial femoral vein is dissected out for a distance of about 3 cm. A strand of size 1 chromic catgut is placed under the proximal and distal ends and held with hemostats. The vein is incised transversely half through its diameter. Any clots which are present in the proximal or distal ends of the vein are removed with suction through a curved glass tube. Suction is then continued until free bleeding takes place from each end, if possible. However, it is more important that free bleeding develop from the proximal end. This may be encouraged by elevating the head of the operating table. After all clots have been removed the vein is ligated at each end and transected. A stitch suture of silk is also placed through each end of the vein. The wound is closed in layers in the usual manner.

If the superficial femoral vein is found to be thrombosed, the common femoral or the common iliac is exposed and ligated. It has been shown by numerous surgeons that it is unwise to ligate a diseased vessel wall, because clots in the proximal segment are difficult to remove or a thrombus may form again in the proximal segment and give rise to pulmonary emboli.

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[23] de Takats, G., and Fowler, E. F.: The Problem of Thrombo Embolism, Surgery **17**: 153-177 (Feb.) 1945.

[24] Ochsner, A., and DeBakey, M.: Therapy of Phlebothrombosis and Thrombophlebitis, Arch. Surg. **40**: 208-231 (Feb.) 1940.

[25] Allen, A. W.: Thrombophlebitis and Pulmonary Embolism, Kentucky M. J. **42**: 160-165 (June) 1944.

Also, because the vein wall is so fragile an uncontrollable hemorrhage could result.

Bilateral superficial femoral ligation is recommended, especially if pulmonary embolism has occurred, in which case thrombectomy is advocated. Postoperative edema has not been of any importance. Elastic bandages applied to the feet and legs can be worn from two to six weeks if edema of any consequence develops.

Dicumarol, 3,3′-methylene-bis-(4-hydroxycoumarin), has been used after superficial ligation with daily, careful estimates of the prothrombin time. We have found no ill effects from its use, except in transurethral resection and in disease of the thyroid and liver; however, it has been reported that others [26] have. As a rule, the patient is ready to be dismissed from the hospital five or six days after superficial femoral ligation if other conditions permit.

We have found also that bilateral vertebral block using procaine hydrochloride and monobromosaligenin (Bromsalizol, a product of Hynson, Westcott & Dunning, Inc.) is useful in giving a better circulation to the extremity the first few days after femoral ligation. Usually, only one block is necessary.

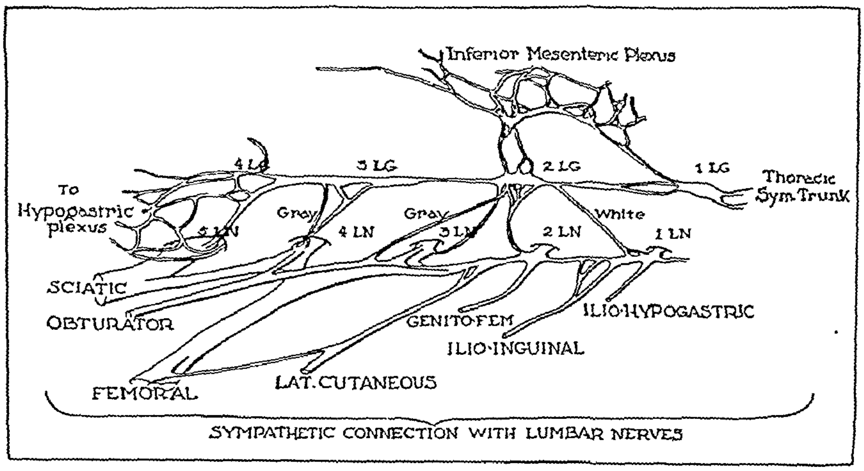

Fig. 7.—Anatomy of the lumbar sympathetic ganglions.

Case 1.—*Phlebothrombosis—pulmonary embolism.* Mrs. E. W., aged 71 years, entered the hospital March 1, 1946 with a Pott's fracture of the right ankle. The fracture was reduced, and a plaster of paris cast was applied. On March 6 the patient was put in a wheel chair, at which time she suddenly noted a pain in the left side of her chest. Faintness and symptoms of shock occurred. The temperature was 101 F., the pulse rate 120 and the respiratory rate 30. Her left leg was normal; tenderness was present over the femoral vein of the right leg. A bilateral superficial femoral ligation with right thrombectomy was performed. A long clot was removed from the right superficial femoral vein. The patient's convalescence was uneventful.

Case 2.—*Bilateral phlebothrombosis.* A. L., a white man aged 47, was first seen in the accident room. He stated that he had been walking more than usual for the past three days. The patient complained of pain on the plantar surfaces of his feet and in the calf muscles; a positive Homan's sign was present. Edema of his ankles was noticeable. The pulse rate was 100, the temperature 100 F.; the heart was normal and the blood pressure was 130 systolic and 80 diastolic. The patient seemed to have a feeling of impending danger. A diagnosis of bilateral phlebothrombosis was made. A bilateral superficial femoral ligation was performed under spinal anesthesia. Clots were removed from the distal end of each vein. The patient was discharged seven days later with no further trouble.

Case 3.—*Phlebothrombosis—pulmonary embolism.* W. S., a white man aged 50, entered the hospital Oct. 1, 1945 for repair of a right inguinal hernia. On October 11 the patient noted the sudden development of pain in the left side of his chest. The temperature was 100.8 F., the pulse rate was 110. A roentgen examination of the chest revealed normal conditions. Homan's sign was positive on the left leg. The left ankle showed slight edema. On October 16 a second attack of pain occurred in the lower left side of his chest and in the right popliteal area; there was a positive Homan's sign with edema of the right ankle. The pulse rate was 108, the temperature 101 F. and the respiratory rate 30. A diagnosis of bilateral phlebothrombosis with pulmonary embolism was made. Superficial femoral ligation and thrombectomy were performed. The patient's convalescence was uneventful.

Case 4.—*Bilateral phlebothrombosis—repeated pulmonary emboli.* Mrs. N. M., a white woman aged 44, was first admitted to the hospital July 1, 1945 with a history of repeated small pulmonary emboli. A diagnosis of left phlebothrombosis was made. A superficial femoral ligation was advised, but the patient refused to submit to the operative procedure. Her history and physical examination were not indicative of cardiac trouble, and she had not undergone previous surgical intervention. After treatment with Dicumarol the patient was discharged. On Oct. 9, 1945 the patient was readmitted to the hospital following a massive pulmonary embolism. A diagnosis of left phlebothrombosis was made; a positive Homans sign was present as well as edema of her left ankle. A *bilateral superficial femoral ligation* was performed with removal of clots from the distal ends of both veins. With the exception of the use of bandages for six weeks for treatment of edema of her ankles, the patient's convalescence was uneventful.

Treatment of Thrombophlebitis.—It was mentioned earlier in this discussion that there is little likelihood of pulmonary emboli developing in a patient with a well established thrombophlebitis. As Homans [16] wisely stated, the greater the swelling, the less danger of a soft detachable mass existing, and if embolism should occur, the veins of the other leg should be considered the offender. Previously the disability due to thrombophlebitis was relatively great; often the patients continued for the remainder of their lives with a swollen, tender leg that was prone to the development of trophic ulcers.

The most plausible theory in regard to the cause of the clinical manifestations in thrombophlebitis is vasospasm, as was suggested by Leriche.[22] Careful experimental and clinical work by Ochsner and DeBakey [2] has confirmed Leriche's observation. The vasospasm affects both the arterial and venous systems and in so doing disturbs the normal physiologic exchange of intravascular and perivascular fluids, thereby producing edema. When the vasospasm is relieved by sympathetic block of the regional sympathetic ganglion there is immediate improvement of the patient's condition. Within a few hours the pain disappears; the temperature rapidly returns to normal; good pulsations reappear in the dorsalis pedis and in the posterior tibial arteries. The skin, too, becomes soft as the edema begins to disappear.

When the lower extremity is involved, the first, second, third and fourth lumbar sympathetic ganglions are each blocked (fig. 7) with 10 cc. of a 1 per cent solution of procaine hydrochloride for the first to fourth ganglions and 10 cc. of monobromosaligenin each for the second and the third. The action of the procaine hydrochloride is immediate, and its effects will disappear within a number of hours. However, the action of the monobromosaligenin, while slower, will last from five to ten days.

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[26] Barker, N. W.; Cromer, H. E.; Hurn, M., and Waugh, J. M.: The Use of Dicumarol in the Prevention of Postoperative Thrombosis and Embolism, Surgery *17:* 207-214 (Feb.) 1945.

When an upper extremity is involved, the most satisfactory method of treatment in our hands is the blocking of the first, second, third and fourth thoracic ganglions. Procaine hydrochloride alone is used. We[27] consider that monobromosaligenin[28] might be too irritating to the pleura. There have been no ill effects with the use of either of these solutions in a large series of cases of thrombophlebitis.

In addition to procaine blocking of the sympathetic ganglion the leg is elevated until the edema disappears, which usually occurs in from three to ten days. This is almost always true if treatment is instituted immediately after the condition develops. As the edema disappears active exercise is advised. If there is some persistence of the edema after the patient is allowed out of bed, an elastic stocking or bandage is worn for from two to six weeks. The bandage should incorporate the foot and leg up to and above the knee.

Case 5.—*Thrombophlebitis of the left leg.* P. S., a white man aged 28, was admitted to the hospital Sept. 6, 1945 after a fracture of the left humerus and multiple pelvis fractures. On September 24 thrombophlebitis developed in the left leg of the patient. His thigh was greatly swollen and was painful. Pulsations in the arteries of the left foot were of poor quality. The temperature was 103 F. and the pulse rate was 110. On September 25 a paravertebral lumbar block was performed on the left side. The first, second, third and fourth lumbar ganglions were each injected with 10 cc. of a 1 per cent solution of procaine hydrochloride. The second and third ganglions were each injected with 10 cc. of monobromosaligenin. On September 27 good pulsations were observed in the dorsalis pedis and posterior tibial arteries. There were less edema and pain at that time. On September 30 the leg and foot were practically normal. On October 1 a paravertebral block using procaine hydrochloride and monobromosaligenin was performed as before. On October 5 no residual signs or symptoms were present in the previously affected leg.

Case 6.—*Thrombophlebitis of the left leg.* Mrs. F. N., a white woman aged 64, was admitted to the hospital Aug. 8, 1945 with an inoperable carcinoma of the rectum. A permanent colostomy was performed, after which there developed a thrombophlebitis of the left leg. There was pronounced swelling of the foot, leg and thigh with poor pulsations in the arteries; the extremity was decidedly painful. The pulse rate was 112 and the temperature 103 F. A paravertebral lumbar block was performed, using procaine hydrochloride and monobromosaligenin in the same proportions as in case 5. This procedure was repeated in six days. After the first block the symptoms began to disappear; at the end of twelve days the extremity was symptom free.

Case 7.—*Thrombophlebitis of the left leg.* Mrs. M. S., a white woman aged 55, was sent to the hospital with nodular toxic goiter, with cardiac arrhythmia and a pelvic mass. Forty-eight hours after her admission to the hospital thrombophlebitis developed in her left lower extremity. The temperature was 102 F., the pulse rate 110 and the blood pressure 170 systolic and 100 diastolic. The extremity was decidedly swollen, edematous and painful. The pulsations in the dorsalis pedis and posterior tibial arteries were extremely poor. The left lumbar sympathetic ganglions were injected, as in cases 5 and 6. Ten days later the temperature and pulse rate were normal. The leg was soft and pulsations were normal, with but little edema remaining.

SUMMARY

Venous thrombosis is a frequent complication and is seen in both medical and surgical patients. It occurs more frequently in the older age group of patients.

Patients who have cancer, cardiac diseases, serious infections, disease of the peripheral veins, hematic dyscrasias and trauma are more prone to have this complication develop.

In phlebothrombosis, the thrombus most frequently develops first in the plantar veins and in those of the calf muscle and propagates itself into the deep veins of the thigh and pelvis. Pulmonary embolism is a frequent complication.

Thrombophlebitis completely occludes the vein and usually begins in the deep veins of the thigh and pelvis. Pulmonary emboli are infrequent, but a painful, edematous leg often results unless appropriate treatment is administered early.

Thrombectomy and ligation of the affected vein above the thrombus is the rational treatment for phlebothrombosis.

In thrombophlebitis blocking of the sympathetic ganglions with procaine hydrochloride and monobromosaligenin (Bromsalizol) effects a cure.

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[27] Aycock, T. B., and Hendrick, J. W.: Sympathectomy for Peripheral Vascular Disease, Texas State J. Med., to be published.

[28] Lee, F. C.; Macht, D. I., and Pierpont, R. Z.: The Use of Bromsalizol in Lengthening the Effect of a Sympathetic Nerve Block, Am. J. M. Sc. **209:** 314-324 (March) 1945.

HEPARIN IN THE TREATMENT OF THROMBOEMBOLIC DISEASE

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The purpose of this report is to present data regarding the rationale and effectiveness of heparin in the treatment of venous thromboembolic disease and to propose an improved method of heparinization, which is both safe and practical.

FUNCTIONAL PATHOLOGY

Although thromboses in the calf and plantar veins were observed for many years, the relationship between these minimal thromboses and fatal pulmonary emboli has been emphasized only in the past decade. It remained for Rössle,[1] Neumann[2] and Frykholm[3] to elaborate the anatomic development of pulmonary emboli and for Homans[4] and Bauer[5] to apply clinical and radiographic criteria by which aseptic deep calf thrombi could be recognized in their incipiency prior to the occurrence of pulmonary embolization. Based on the functional anatomy and clinical pathology of pulmonary embolization, Homans,[6] Bancroft,[7] Ochsner,[8]

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Read before the Section on Surgery, General and Abdominal, at the Ninety-Fifth Annual Session of the American Medical Association, San Francisco, July 3, 1946.

[1] Rössle, R.: Ueber die Bedeutung und die Entstehung der Wadenvenenthrombosen, Virchows Arch. f. path. Anat. **200:** 180, 1937.

[2] Neumann, R.: Ursprungszentren und [illegible] ein-Thrombose, Virchows Arch. f. path. Anat. **301:** [illegible]

[3] Frykholm, R.: The Pathogenesis an[illegible] of Venous Thrombosis, Surg., Gynec. & Obst. **71:** [illegible]

[4] Homans, J.: Venous Thrombosis in the Lower Limbs: Its Relation to Pulmonary Embolism, Am. J. Surg. **38:** 316, 1937.

[5] Bauer, G.: Venographic Study of Thromboembolic Problems, Acta chir. Scandinav. (supp. 61) **84:** 1, 1940.

[6] Homans, J.: Circulatory Diseases of the Extremity, New York, The Macmillan Company, 1939; Varieties of Thrombophlebitis of Limbs: Their Origin, Course and Treatment, Am. J. Surg. **44:** 3, 1939.

[7] Bancroft, F. W.: Proximal Ligation and Thrombectomy for Phlebothrombosis of Femoral and Iliac Veins, Ann. Surg. **121:** 175, 1945.

[8] Ochsner, A.: Intravenous Clotting, Surgery **17:** 240, 1945.

Allen and his co-workers [9] and Bauer [10] then elaborated definitive principles of treatment for this condition.

It would be fitting at this point to trace the functional pathology of such a vascular accident. At the outset it must be admitted that many phases of the process are imperfectly understood and that many gaps exist in our knowledge of spontaneous intravascular clotting. Our interest in the genesis and nature of intravascular clots was stimulated during our investigation of experimental human frostbite.[11] A study of the train of events in this condition by Greene,[12] and Rotnes and Kreyberg [13] revealed that there is a clumping of erythrocytes in the dilated arterioles for at least seventy-two hours after exposure. This clumping has been attributed to loss of plasma through the highly permeable vascular wall. As a result the red cells are stranded, silting up the blood vessels and forming what may be called a sludge. A related and revealing circumstance may be witnessed in the work of Knisely, Eliot and Bloch [14] on the formation of sludge in the blood during malaria and in traumatic shock. They have observed that the red cells become agglutinated to each other and form small clumps, as a result of which the flow of blood becomes sluggish and generalized thromboses supervene.

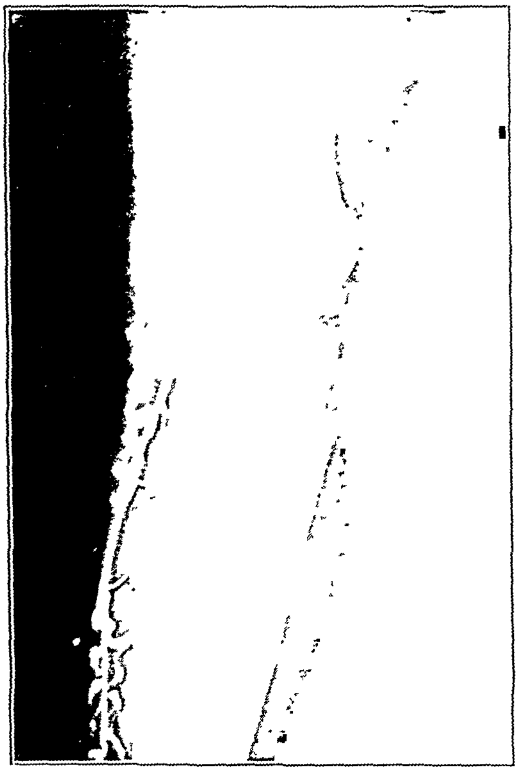

Fig 1—Phlebogram taken five months after femoral venous thrombosis treated by lumbar paravertebral block. Note the abnormal venous shunting through superficial channels and the failure of visualization of the deep venous system due to thrombotic occlusion of the femoral vein.

It is a well established fact that the blood platelet count rises rapidly in the immediate postoperative period, during which time the platelets become hyperadhesive.[15] Both phenomena attain their maximum peak about the tenth day after operative intervention. In addition to sludge formation and the changes in the number and quantities of platelets, the postoperative period is accompanied by a variable hemoconcentration, increased viscosity of plasma, hyperglobulinemia and increased fibrinogen content. Since all these factors contribute to clot formation, the stage is set for intravascular thrombosis anywhere in the body.

Although all the component elements for clot formation are present, we are still unaware of the precise catalyzing circumstance which initiates the chain reaction. In a statistical review of phlebothrombosis, one suggestive fact emerges, that a common denominator may be the slowing of the venous vascular stream, whether because of acute angulation or actual obstruction or by increased venous pressure secondary to either obesity or cardiac insufficiency. If one considers what part of the body would be most subject to slowing of the blood stream, for self-evident reasons the lower extremities must rank first. Thus during the postoperative period, in the presence of these chemical and physical changes in the blood, minimal intimal trauma in a venule of the lower extremity may well initiate a local intravascular thrombosis.

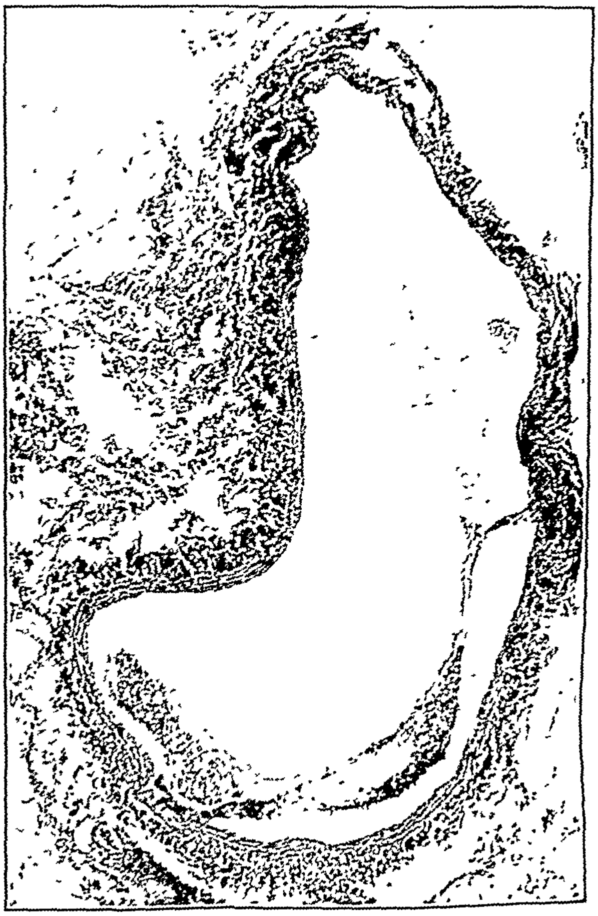

Fig. 2.—Photomicrograph of normal jugular vein of a rabbit, all coats intact; × 43.

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[9] Allen, A W, Linton, R R., and Donaldson, G. A. Venous Thrombosis and Pulmonary Embolism. Further Experience with Thrombectomy and Femoral Vein Interruption, J. A. M. A. **128:** 397 (June 9) 1945.

[10] Bauer, G Heparin in Venous Thrombosis, J. A. M. A. **131:** 196 (May 18) 1946

[11] Lange, K., and Loewe, L · Subcutaneous Heparin in the Pitkin Menstruum for the Treatment of Experimental Human Frostbite, Surg., Gynec. & Obst. **82:** 256, 1946.

[12] Greene, R Immediate Vascular Changes in True Frost-Bite, J. Path. & Bact. **55:** 259, 1943.

[13] Rotnes, P. L., and Kreyberg, L: Eine Methode zum experimentellen Nachweis von Stase mittels spezieller Praparate, Acta path. et microbiol. Scandinav., 1932, supp 11, p 162.

[14] Knisely, M. H; Eliot, T. S, and Bloch, E. H.: Sludged Blood in Traumatic Shock, Arch Surg **51:** 220 (Nov.-Dec.) 1945.

[15] MacKay, W.: Blood Platelet: Its Clinical Significance, Quart. J. Med. **24:** 285, 1931. Wright, H. P.: Adhesiveness of Blood Platelets in Normal Subjects with Varying Concentrations of Anti-Coagulants, J. Path. & Bact. **53:** 255, 1941; Changes in Adhesiveness of *Blood Platelets* Following Parturition and Surgical Operations, ibid. **54:** 461, 1942.

The original thrombotic process usually starts in the smaller vessels in the muscular portions of the calf and, less frequently, in the plantar veins. The clot progresses and soon reaches a larger vessel, into which it extends and grows. The clot is at first attached only to the venule and only later engages the wall of the larger vessel. As the clot propagates it consists in the main of the red cell clot which waves freely in the vascular stream. This clot contains minute amounts of fibrin and is but one stage removed from the sludges observed in experimental frostbite and in malaria.

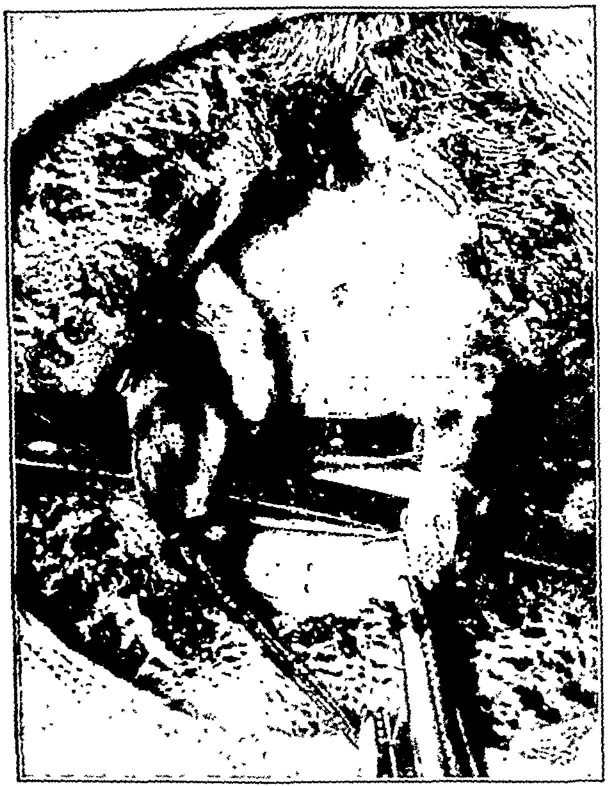

Fig. 3.—Nonheparinized control: jugular vein of a rabbit six days after trauma, presenting a visible and palpable clot.

We have reproduced this intermediate stage in the laboratory—a palpable, visible clot, which, however, is so loosely put together that it disintegrates readily. As the clot grows, the propagating proximal end represents all the stages previously described. It is now that the clot is most dangerous, for it may separate at any time, either spontaneously or as the result of some muscular exertion, such as straining at stool or getting out of bed. If the clot does not become detached it slowly becomes organized, attaching itself to the vessel wall during the process. During the stage of clot propagation immediately adjacent tributaries and collateral vessels are also involved; consequently, when organization with either obliteration or recanalization occurs there is a shunting of the venous stream to superficial vessels incapable of bearing the burden. This bizarre venous shunting is readily seen in postthrombotic phlebograms (fig. 1). Although we have been discussing so-called aseptic phlebothrombosis, essentially the same process occurs in the infective thrombophlebitis, in which the most proximal portion of the clot resembles the noninfective variety.

In either the aseptic or septic types of thrombophlebitis, if the process continues long enough, a periphlebitis occurs which involves the adjacent perivenous lymphatics. Lymphatic fluid is capable of coagulating, and it is quite conceivable that postphlebitic edema may be due in great part to consequent obstruction of the return lymphatic flow of an extremity.

RATIONALE

It is obvious that, in the situations which we have described, termination of the progressive thrombotic process would be ideal. To the best of our present knowledge the anticoagulants appear most suited for this purpose. Of these, we have been impressed by the properties of heparin. The accepted knowledge concerning the mechanism of action of this agent is as follows: (1) it prevents, with the aid of a plasma cofactor, the conversion of prothrombin to thrombin; (2) it forms a strong antithrombin in conjunction with serum albumin, and (3) it prevents the formation of thromboplastin from platelets. These properties predicate the fact that a clot, regardless of what stage it is in, cannot propagate in the presence of heparin. However, what happens to the clot which is already present?

The action of heparin has been studied mostly in vitro. Animal experiments in our laboratory[16] have yielded the following data:

1. Red cell clots which are not organized and which contain a minute amount of fibrin (sludge stage) disappear completely under heparin therapy (figs. 2, 3, 4, 5 and 6).

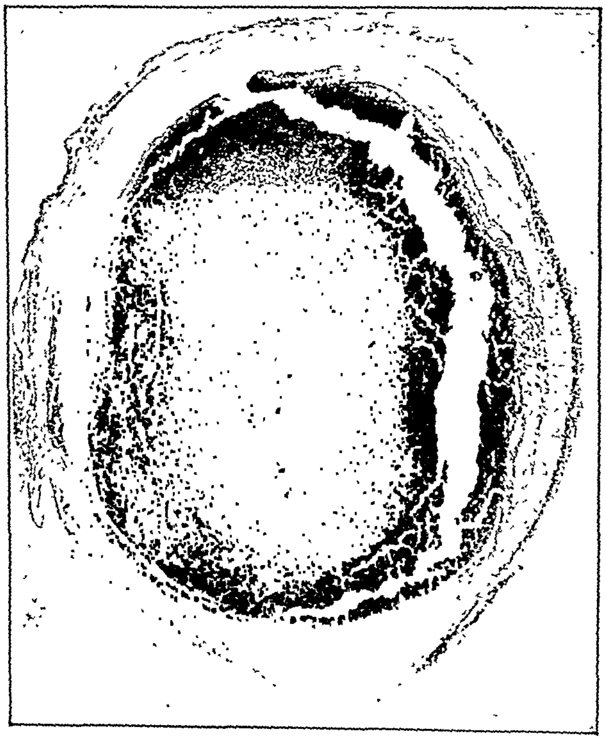

Fig. 4.—Photomicrograph of section of jugular vein (fig. 3) with all coats intact. The blood presents no classic evidence of clot and is present as particulate masses with a minimum of fibrin (sludge); magnification slightly reduced from × 30.

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[16] Our method of consistently producing clots in rabbits has been to traumatize the jugular vein with twenty hammer strokes after it has been ligated proximally. This work will be fully reported in a forthcoming paper.

2. Heparin therapy maintains patent adjacent collaterals and tributaries, which ordinarily would become involved in the thrombotic occlusive process. These compensatory collaterals often become as large as the originally occluded vessel (fig. 7). This phenomenon has not been observed in control animals (fig. 8). It may be assumed, though not necessarily proved, that these processes also occur in obstructed lymphatic vessels.

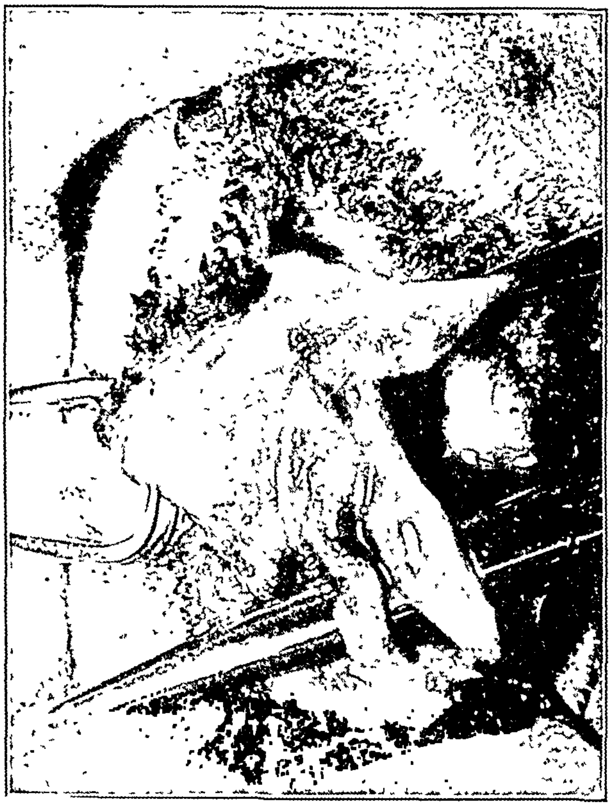

Fig 5.—Jugular vein of rabbit six days after trauma with fourteen days of heparinization superadded. The wall is thickened, but no gross evidence of clot is visible. Compare with the control nonheparinized vein (fig. 3).

Although methods of treatment of thrombophlebitis are legion, two major thoughts have dominated the clinical scene during the past five years; namely, the ligation of veins and anticoagulant therapy. The ligation of veins need not be discussed here, since the literature abounds in articles advocating this form of therapy. Our contrary views on the matter have been set forth elsewhere.[17] We do *not* believe that bilateral vein ligation as recommended can be classified as an innocuous procedure.

Anticoagulant therapy deals with the abnormal physiology of blood and lymph everywhere in the body. Dicumarol and heparin have been the most widely used anticoagulants. Delayed action, potential hazards and the requisite complicated but indispensable laboratory procedures militate against Dicumarol as the anticoagulant of choice. The action of heparin on the other hand is prompt and readily controlled and administered. Heretofore, the major drawbacks to the administration of heparin have been the necessity of maintaining adequate anticoagulant levels by a continuous intravenous drip method with its accompanying discomforts and inconveniences to the patient and physician alike and the inordinate quantity of the drug required, with its attendant expense.

These objections have been overcome by incorporating the drug in the Pitkin menstruum,[18] which was developed to retard the rate of release of water-soluble drugs injected subcutaneously or intramuscularly.

Heparin/Pitkin menstruum is a preparation of various amounts of heparin with or without vasoconstrictor drugs dissolved in the Pitkin menstruum, which is composed of gelatin, dextrose and glacial acetic acid in definite proportions which vary according to the amount of heparin. The various formulas[19] (table 1) were devised so that the dosage might be varied as indicated in the treatment of the individual patient.

TABLE 1.—*Heparin/Pitkin Menstruum Formulas*

	With Vaso-constrictors		Without Vaso-constrictors	
Crystalline sodium salt of heparin, mg.	300.0	200.0	800.0	200.0
Epinephrine hydrochloride, mg.	1.0	1.0	0	0
Ephedrine sulfate, mg.	25.0	25.0	0	0
Chlorobutanol, mg.	0.5	0.5	0.5	0.5
Eucupin * dihydrochloride, mg.	1.0	1.0	1.0	1.0
Pitkin menstruum, cc.	3.0	2.0	8.0	2.0

* Contains 1 per cent eucupin base, 3 per cent ethylaminobenzoate and 5 per cent benzyl alcohol in oil of sweet almond.

In general the anticoagulant action of heparin in the menstruum combined with vasoconstrictor drugs is more prolonged than that of the same amount of heparin in the menstruum without the vasoconstrictor

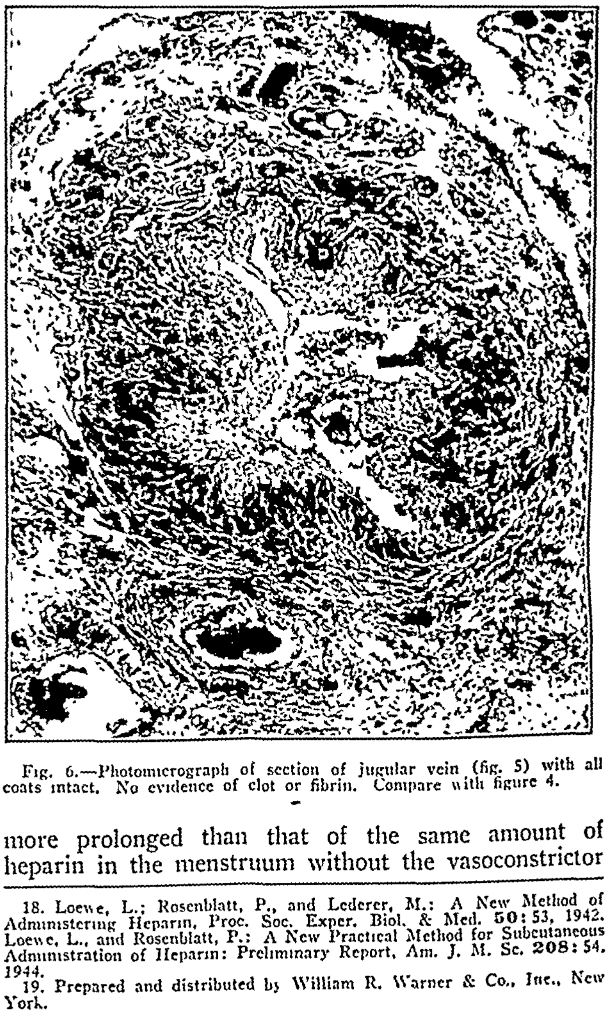

Fig. 6.—Photomicrograph of section of jugular vein (fig. 5) with all coats intact. No evidence of clot or fibrin. Compare with figure 4.

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[17] Loewe, L.; Rosenblatt, P., and Hirsch, E.: Venous Thromboembolic Disease, J. A. M. A. **130**: 386 (Feb. 16) 1946.

[18] Loewe, L.; Rosenblatt, P., and Lederer, M.: A New Method of Administering Heparin, Proc. Soc. Exper. Biol. & Med. **50**: 53, 1942. Loewe, L., and Rosenblatt, P.: A New Practical Method for Subcutaneous Administration of Heparin: Preliminary Report, Am. J. M. Sc. **208**: 54, 1944.

[19] Prepared and distributed by William R. Warner & Co., Inc., New York.

drugs. In thromboembolic venous disease heparin with vasoconstrictor drugs is customarily employed.

Heparin/Pitkin menstruum given as a simple deep subcutaneous deposit every two or three days supplants the technically more difficult intravenous administration of the aqueous solution. Thus, the total requirement of heparin for a given patient is greatly curtailed, and the overall cost of the treatment program is materially reduced.

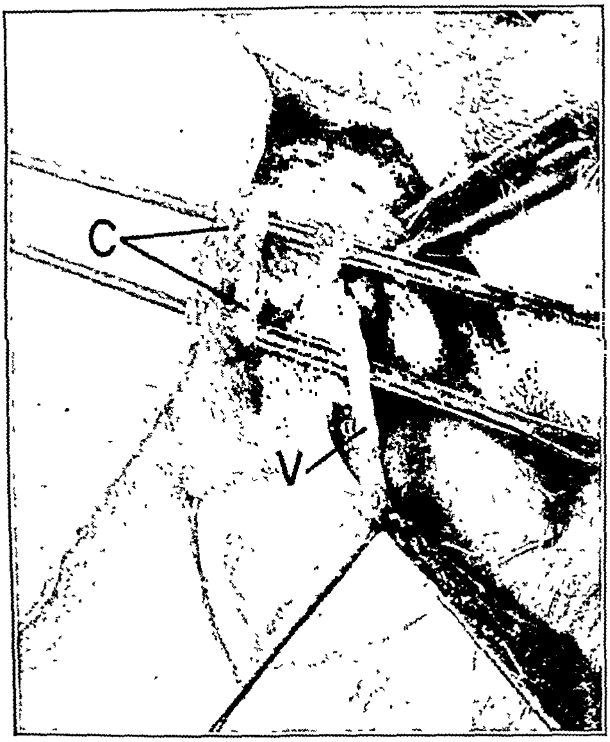

Fig. 7.—Jugular vein of rabbit fourteen days after trauma with fourteen days of heparinization superadded. Minimal, if any, blood flow through the traumatized vessels (*V*). Note the dilated extensive compensatory collaterals (*C*). Compare with the control nonheparinized vein (fig. 8).

The technic of administration of heparin in the Pitkin menstruum, its clinical use and the method of following the patient's clinical course has already been presented in great detail in previous communications.[20] The one objection to the preparation, the pain factor so disturbing to the patient, has now been overcome by careful buffering which has made the p_H of the gel more physiologically acceptable.

CLINICAL OBSERVATIONS

The clinical deportment of heparin in the Pitkin menstruum has been observed in 168 patients[21] representative of all forms of venous thromboembolic disease (table 2). The results continue to be eminently satisfactory as judged by the effective control of pulmonary embolization, the prompt amelioration of pain and discomfort, the rapid recession of edema, the reduction in morbidity, the acceleration of convalescence and the virtual absence of residual edema, particularly when patients are treated without delay.

Most informative are the statistics with respect to the patients who had pulmonary embolization. There were 4 fatalities in this group, representing over 2 per cent of the entire series of 168 patients and over 6 per cent of the 63 patients who had suffered from one to six episodes of pulmonary embolization. These 4 treatment failures occurred early in our experience, before the optimum treatment program had been established.

The span of treatment for uncomplicated thrombophlebitis and/or phlebothrombosis is ten days to two weeks. For patients with pulmonary embolization an additional week or two of therapy is required, depending on the extent of pulmonary infarction. In any event the full effect of heparin must be present at the time when the patient is first allowed out of bed. The consistently favorable response has fully justified our conservative plan of therapy.

Table 2.—*Heparin Treatment* of One Hundred and Sixty-Eight Consecutive Patients with Venous Thromboembolic Disease*

Classification	No. of Patients	No. of Patients with Pulmonary Embolization	Deaths Due to Pulmonary Embolization
Postoperative thrombophlebitis and/or phlebothrombosis	75	31	3
Thrombophlebitis and/or phlebothrombosis, miscellaneous †	51	23	0
Postpartum thrombophlebitis	21	5	0
Postinfectious thrombophlebitis	9	0	0
Post-traumatic thrombophlebitis	7	4	1
Migrating thrombophlebitis	5	0	0
Totals	168	63	4 (2.4%)‡

* Administered in Pitkin menstruum as a deep subcutaneous deposit.

† Occurring without ascertainable exciting cause (thrombophiles) or as a complication of carcinoma or varicose veins.

‡ Four treatment failures, 2.4 per cent of entire series and 6.3 per cent of 63 patients with pulmonary embolization, occurred before the optimum treatment program was established.

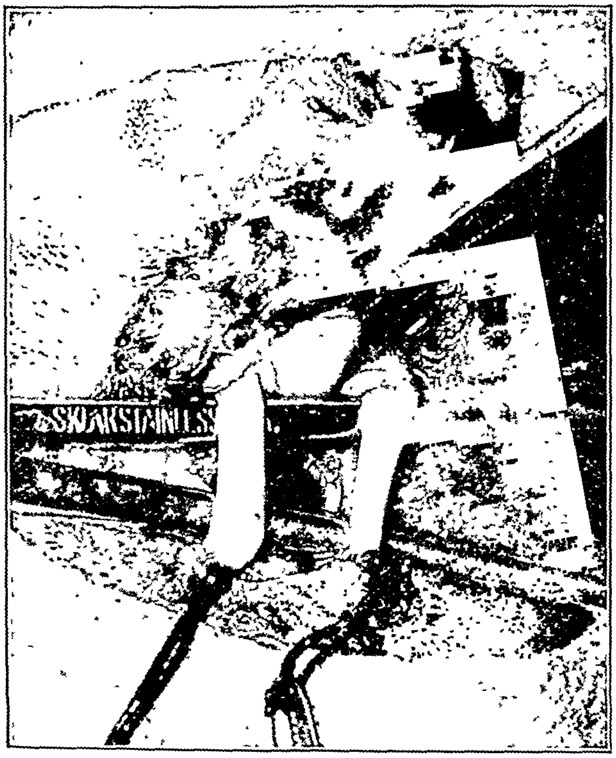

Fig. 8.—Nonheparinized control: jugular vein of a rabbit fourteen days after trauma. The vessel is thickened and gray and contains a solid, palpable clot.

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[20] Footnotes 17 and 18.

[21] This series of cases was recruited principally from the Departments of Surgery, Medicine, Gynecology and Obstetrics of the Jewish Hospital. We wish to thank them for referring this clinical material.

Papaverine is used concomitantly in liberal dosage; 1 to 1½ grains (0.06 to 0.09 Gm.) every four hours intramuscularly or intravenously, then, later, maintenance dosages by mouth. The use of digitalis is discouraged because of its possible thromboplastic influence, and smoking is strictly forbidden. Paravertebral block, although optional and effective in arterial occlusion, is not incorporated in the treatment program for venous thromboembolic disease, since we have observed that the complicating vasospasm in this disorder disappears almost immediately after the conjoint use of the subcutaneous heparin/Pitkin menstruum and papaverine.

Although truly comparative statistics are still not available, a review of our clinical material considered in the light of our animal experimentation continues to make subcutaneous heparin, which has supplanted ligation of the proximal veins in our clinic, the treatment of choice in venous thromboembolic disease.

SUMMARY AND CONCLUSIONS

1. The functional pathology of intravascular clotting has been outlined as a basis for evaluating the treatment of thromboembolic disease.
2. Heparin plays a vital role in arresting the progress of intravascular thrombosis and promotes restoration of the vascular stream.
3. Heparin in the Pitkin menstruum was employed in the treatment of 168 consecutive patients with venous thromboembolic disease with satisfactory results.

VENOUS THROMBOSIS AND PULMONARY EMBOLISM

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This communication will present the experience at the Massachusetts General Hospital with thrombosis and embolism up to June 1946. Previous reports have stressed the importance of this syndrome and have called attention to the diagnostic criteria.[1] The safety of interruption of the femoral veins in the treatment of this disorder has been demonstrated. We wish now to record our present views on the subject including a controlled study on the use of Dicumarol.

PROPHYLAXIS

Prevention of thrombus formation in the deep veins of the legs is, in fact, the basic principle on which investigators in this field have been working for many decades. Progress has been slow, yet through a coordination of ideas much has been accomplished along these lines. Inasmuch as thrombosis within the veins is most apt to occur as a complication of illness or operative intervention, the opportunity for prophylaxis against this additional hazard to the patient is often overlooked or for obvious reasons is not easily carried out. Trauma to and stasis in the veins may be avoided in many instances, but often the actual disease or injury precludes certain forms of prophylactic treatment which have been found useful under more suitable conditions. It is our belief that various types of patients can be protected against embolism by utilizing the forms of preventive measures best suited to the particular case.

In the first place, we must face the facts concerning the frequency and seriousness of thrombosis and embolism with reference to the age and general condition of the patient. Our records show that these complications are much less likely to develop in the young than in the aged. Also, the more debilitated the patient, with added restrictions as regards mobility of the extremities plus trauma and infection, the more likely it is that thrombosis will occur. That all forms of prophylaxis are not adaptable to all patients seems obvious; yet many reports on the subject imply that one method may be applied regardless of the age factor and often without regard to the disease or injury under treatment.

Dicumarol can be safely used in a considerable number of patients. As shown by our comparative data, it is effective in the prevention of thrombosis and embolism even with the small dosage which we have tried. On the other hand, we have not considered it safe to use this drug in many patients for reasons shown in our table of contraindications (table 1). We have withheld it from the older age group on the basis of complications in the presence of arteriosclerosis after the use of heparin. Our reason for not using Dicumarol in the younger age group was primarily the infrequency of thrombosis and of fatal embolism in patients under 40 years of age. We admit that we could with safety give the drug to many of the younger patients and that we would use it as a part of the treatment of thrombosis and embolism in any event.

It seems to us that the age group between 40 and 65 is the correct one in which to use Dicumarol for the prevention of thrombosis. In this group there are many patients with serious ailments who are apt to be restricted in their activities by either their disease or the therapeutic measures indicated. In many of these patients, if left untreated, there will develop thrombosis of the veins of the legs, and many will have pulmonary emboli—some of which will be fatal. In those who recover the convalescence will be prolonged. Unless there is a contraindication to the use of Dicumarol, or unless laboratory control of the prothrombin time is not available, the majority of this group of patients can be protected from thrombosis and embolism by using small doses of this drug postoperatively.

In those patients beyond the age of 65 and in selected prematurely old or debilitated persons we believe that the best method of protection against thrombosis and embolism is interruption of the superficial femoral veins. It took considerable courage to adopt this point of view, but we were so impressed with the complete lack of circulatory or lymphatic disturbance after the interruption of the normal superficial femoral vein that we now have no hesitation in advocating this procedure as a method of choice (table 2). More instances of fatal embolism without warning occur in this older age group. We have no proof that phlebothrombosis is more likely to develop than thrombophlebitis. It

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[1] Allen, A. W.; Linton, R. R., and Donaldson, G. A.: Thrombosis and Embolism, Ann. Surg. **118**: 728-740, 1943; Venous Thrombosis and Pulmonary Embolism, J. A. M. A. **128**: 397-403 (June 9) 1945. Allen, A. W.: Thrombosis and Embolism, Bull. New York Acad. Med. **22**: 169-184 (April) 1946.

appears, however, that a much higher percentage of the older patients have enough thrombus detach at one time to cause death than do the younger ones. True phlegmasia alba dolens, as it is seen in young convalescents, is much more infrequent in the aged. Since the bland type of thrombosis is so much more dangerous from the standpoint of embolism than is the inflammatory type, we have a further indication for vigorous prophylactic measures in the older group of patients.

In patients under the age of 40 we consider that there is less need for the routine use of interruption of the femoral veins or Dicumarol therapy as prophylactic measures against thrombosis, if the clinician keeps alert and institutes proper treatment when indications arise. It is helpful to carry out systematic active exercises of the legs and to avoid tight dressings and abdominal distention. Gravity to keep the leg veins empty and the use of pressure bandages on the legs are helpful adjuncts. In addition, one must carefully examine the legs twice a day for signs of swelling, dilatation of the superficial veins and tenderness along the course of the deep veins. Also, one must carefully evaluate any pain or discomfort in the legs as well as in the chest. The clinical chart is of importance, since the simultaneous recording of a slight elevation of temperature, pulse rate and respiratory rate gives a clue to phlebothrombosis, even when there are no signs in the legs or pain in the chest. Routine use of the drug in this age group would put a heavy strain on the laboratory, which would outweigh its advantages. Routine prophylactic interruption of the superficial veins, would put an unwarranted burden on the operating rooms.

Early ambulation has been used in our hospital for a number of years and has many advantages in approximately one half of the patients treated by surgical means. With wounds made on an anatomic basis and with the use of nonabsorbable sutures we can avoid some of the usual complications of convalescence. Patients do not get soft from long rest in bed and are able to return to their regular occupations at a much earlier date. Normal bodily functions are enhanced and many hospital days are saved. It was felt that early ambulation might lower the incidence of thrombosis and embolism. There is considerable evidence against this and little to support it.[2] Perhaps the chief factor in our disappointment in this regard is due to the misinterpretation of the term early ambulation. This should mean that the patient actually gets out of bed and walks and then lies down again. Instead of this, we find these patients sitting in a chair with their feet on the floor after having actually been lifted there from the bed by a well meaning orderly. Stasis in the leg veins, being increased by such a maneuver, may well offset any other beneficial effect that early rising may have. We now believe that, unless patients can carry out the muscular activity needed to keep the leg veins empty, early risers should be protected from thrombosis and embolism according to the principles outlined for the various age groups.

THERAPY

Treatment of thrombosis of the deep veins of the legs, with or without pulmonary infarct, has been under discussion from several points of view. In the first place, one must differentiate between phlebothrombosis and thrombophlebitis. In the bland type of thrombosis one has little opportunity for therapeutic measures that are effective other than interruption of the deep vein—preferably above the thrombus. The diagnosis is often made after infarct has taken place. Too often such a complication is unsuspected, and the patient may die suddenly from massive embolism when otherwise making a satisfactory recovery. In such patients there may be little to indicate the existence of thrombosis. On careful examination, however, there can usually be found sufficient evidence to warrant the institution of proper therapy. Unfortunately, such minor signs as dilatation of the superficial veins of the foot, slight swelling of the extremity or a concomitant slight rise in temperature, pulse rate and respiratory rate are often overlooked. Even sudden pain in the chest may be attributed to atelectasis, pleurisy or pneumonitis, when in fact infarct has occurred.

TABLE 1.—*Reasons for Contraindication of Dicumarol Therapy*

Reason	Percentage
Hospitalized for minor procedures	47.5
Admitted for study, no surgical operation	18.0
Disease of the liver	5.5
Hypertension	7.0
Disease requiring chest surgery	6.0
Plasma prothrombin determination above 25 seconds	6.5
Hyperthyroidism	3.5
Excessive bleeding at operation	2.5
Diabetes	2.0
Arthritic patients taking acetylsalicylic acid	1.5
Total	100.0

Of 985 patients between the ages of 40 and 65 who were admitted to the East Surgical Service of the Massachusetts General Hospital from Jan. 1, 1945 to June 1, 1946 Dicumarol was received by 162 (16.5 per cent). In the remaining 823 patients, use of the drug was contraindicated.

TABLE 2.—*Incidence of Therapeutic and Prophylactic Interruption of the Femoral Vein in 1,281 Cases from 1937 to June, 1946*

	Therapeutic	Prophylactic		Total
1937 to 1942	202	0	0%	202
1943	150	15	9%	165
1944	208	72	26%	280
1945	241	178	45%	392
1946 (June 1)	150	92	38%	242
Total	924	357		1,281

Thrombophlebitis is a term which should be used only when inflammation in and about the veins and lymphatics produces pain, swelling, tenderness and fever. This type of thrombosis may come on quickly, and in its fulminating form is known as phlegmasia alba dolens. If such is the case infarct is less apt to occur, and if it does it may not be massive in character. It is justifiable to treat patients with such types of thrombosis by procaine block of the lumbar sympathetic nerves,[3] elevation, the local application of heat and even activity. The anticoagulant drugs are valuable in the treatment of such conditions, inasmuch as they prevent spread of the thrombotic process. In this type of thrombosis interruption of the femoral veins is justifiable only in the early phases of the disease. Ligation of the vena cava is indicated if such a thrombosis is the cause of repeated septic infarcts.

Between phlebothrombosis and thrombophlebitis there are all gradations of the disease. In many patients thromboses which are apparently bland in the beginning will gradually develop into thrombophlebitis. This change in character may not be a real one, since the inflammatory element may be present in the beginning of a bland thrombus. The gradual, insidious onset as opposed to the sudden development of the fulminating inflammatory type of the disease may, in fact, be dependent on the virulence of the micro-organisms associated with the infection. That some cases of phlebothrombosis remain as such is certain. Most of the sudden fatalities from massive embolus occur while the thrombus is bland and not held firmly within the vein by inflammation. It has been obvious to us, in our climate at least, that in the majority of survivors from phlebothrombosis there develops a true inflammatory reaction in and about the involved veins if treated expectantly.

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[2] Blodgett, J. B., and Beattie, E. J.: Early Postoperative Rising: A Statistical Study of Hospital Complications, Surg., Gynec. & Obst. **82:** 485-489 (April) 1946.

[3] Ochsner, A., and DeBakey, M.: Thrombophlebitis: Role of Vasospasm in the Production of Clinical Manifestations, J. A. M. A. **114:** 117-124 (Jan. 13) 1940.

Phlebotomy and thrombectomy with interruption of the superficial femoral veins not only prevents fatal embolism but shortens the course of thrombophlebitis. Most of our patients have this operation performed before any signs of inflammation are apparent, and in many of these thrombophlebitis fails to develop. In fact, many of them have venous interruption performed before the thrombus has reached the level of the common femoral vein. Some of them, however, do run a mild course of thrombophlebitis after the interruption of the femoral veins. A small percentage of patients continue to have infarcts after this operation. Patients who have pain, tenderness and swelling in the leg after interruption of the veins and those who continue to have infarcts are treated further by procaine block of the lumbar sympathetic ganglions and by anticoagulants.

The treatment of phlebothrombosis and early thrombophlebitis by anticoagulants alone has not recently been used in our clinic. Earlier experiences revealed that such management in our hands was unsatisfactory.[4] Some patients did well on heparin therapy as long as the drug was continued. However, it was found that the process flared again shortly after heparinization was stopped, and 1 such patient succumbed to massive embolus during this treatment. It therefore seems illogical to us to use this method of treatment against this disease unless it has been preceded by interruption of the femoral veins.

OPERATIVE TECHNIC

After observation of repeated instances of the lack of complete understanding in regard to our conception of the way and manner in which interruption of the femoral vein should be carried out, we feel justified in emphasizing the details of operative technic. The dangers of interruption of the common femoral and saphenous veins have been stressed by Dennis,[5] who reported an instance of fulminating edema subsequent to such a procedure. The patient's leg was saved by liberal incisions down through the fascia to the muscles. In addition to this danger we have pointed out the increased difficulties of exposure of this segment of vein, due to its short course and numerous muscular branches. Should one find that the vena profunda femoris is thrombosed at the time of interruption of the superficial femoral vein, the ligature can be placed around the profunda with greater ease than an interruption of the common femoral itself could be performed. This ligature adequately eliminates the vena profunda femoris as a source of subsequent emboli and, when combined with proper interruption of the superficial femoral vein, accomplishes the same result as does interruption of the common femoral vein.

In our opinion interruption of the iliac veins as advocated at one time by Homans[6] is not often indicated. This attack on the problem is theoretically sound, since the ligature can more often be placed around the vein above the thrombus. Practically, however, it has many disadvantages. Particularly hazardous is the necessity for two major operations, which must be performed under a form of anesthesia which is more dangerous than local infiltration on these exceedingly ill patients. It may be argued that only one iliac vein need be tied if the other is uninvolved. If both iliac veins should need interruption on the basis of septic thrombosis with repeated infarcts, it seems to us that ligature of the inferior vena cava is a better procedure. Our experience would indicate that such an operation is seldom necessary, since the results from phlebotomy and thrombectomy through the superficial femoral vein have proved to be satisfactory in such a large number of cases.

One of us (R. R. L.) has performed this operation on 13 patients. In this group it was not found necessary to interrupt the ovarian veins, but this added step should be considered, as has been pointed out by Collins and associates.[7] In 2 patients in this group there has developed chronic ulcer of the lower legs, and a third one has had a recurrence of ulcerations, which incidentally have responded to femoral vein interruption. These experiences have made us hesitate to interrupt the inferior vena cava except in the unusual and infrequent case of septic thrombosis with pulmonary infarction.

It is important that the lymphatic vessels in the region of operative intervention be interfered with as little as possible. This is one of the chief reasons for avoiding an incision that transects the lymph channels. Transverse or oblique wounds are certain to interrupt lymphatic vessels and should never be used to expose the deep femoral vessels. The most persistent and disabling edema that we have seen after interruption of the femoral veins occurred in a patient operated on in another hospital through a 6 inch (15 cm.) oblique incision below the crease of the groin. In spite of the natural lines of cleavage in the skin being transverse or oblique in this region, it is difficult when such an incision is used not to carry the dissection across many of the lymphatic vessels.

Another important disadvantage to the oblique or transverse incision is that it handicaps the surgeon in the exposure of the femoral vessels; if severe bleeding is encountered, due to the accidental tearing of one of the tributaries of the femoral vein, serious and irreparable damage may be done to the femoral artery in attempting to control the hemorrhage. One of us (R. R. L.) has recently been consulted in such a case at another hospital. The surgeon, using a transverse incision, encountered serious venous bleeding during the operation. Before it was controlled both the superficial and deep femoral arteries were ligated to save the patient's life from hemorrhage. The circulation of the extremity had been irreparably damaged when first seen, necessitating a low thigh amputation at a later date. The use of a vertical incision will prevent such catastrophes, since with it more complete exposure of the femoral vessels is obtained; and if accidental hemorrhage is encountered it can be more readily controlled, if necessary by further extension of the incision. The use of this type of incision is one of the cardinal principles in the surgery of major blood vessels of the extremities and it is our opinion that its use in interruptions of the femoral veins cannot be overemphasized.

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[4] Welch, C. E., and Faxon, H. H.: Thrombophlebitis and Pulmonary E olism, J. A. M. A. **117:** 1502-1508 (Nov. 1) 1941.

[5] Dennis, C.: Disaster Following Femoral Vein Ligation for Throm- ophlebitis: Relief by Fasciotomy; Clinical Case of Renal Impairment ollowing Crush Injury, Surgery **17:** 264-269 (Feb.) 1945.

[6] Homans, J.: Deep Quiet Venous Thrombosis in the Lower Limb, Surg., Gynec. & Obst. **79:** 70-82 (July) 1944.

[7] Collins, C. G.; Jones, J. R., and Nelson, E. W.: Surgical Treatment of Pelvic Thrombophlebitis: *Ligation of Inferior Vena* Cava and Ovarian Veins; a Preliminary Report, New Orleans M. & S. J. **95:** 324-329 (Jan.) 1943.

An incision about 8 cm. in length from the crease of the groin over the pulsating artery along the course of the vessels distally allows the vascular bundle to be exposed with minimal lateral dissection. The lymphatic vessels can be retracted laterally, and few of them need be transected. The exact center of such an incision leads to the uppermost segment of the superficial femoral vein. The junction of the superficial and profunda femoris is identified by a bulge in the superficial femoral just distal to this bifurcation (fig. 1). The artery overlies the vein in this region and is easily dissected free and held out of the way. It should not be isolated completely and retracted with ligatures or rubber tubing, since 1 case of thrombosis of the femoral artery due to rupturing the arterial wall, with resultant gangrene, has been seen in another hospital in which this method was used. The superficial vein is usually free of branches over its uppermost 1 to 2 cm. This enhances the isolation of this segment so that ligatures are easily placed at the upper and lower levels of the freed portion of the vein. It is important to open the vein and to remove existing thrombi from above as well as from below. A carefully used glass tubing suction tip aids in the removal of clots. Free bleeding from both ends of the vein is desirable. With strong suction after the thrombi are removed, one must guard against the removal of unnecessary blood. Our attention has been called to the reduction of the blood volume to shock levels by this method in an exceedingly short time.

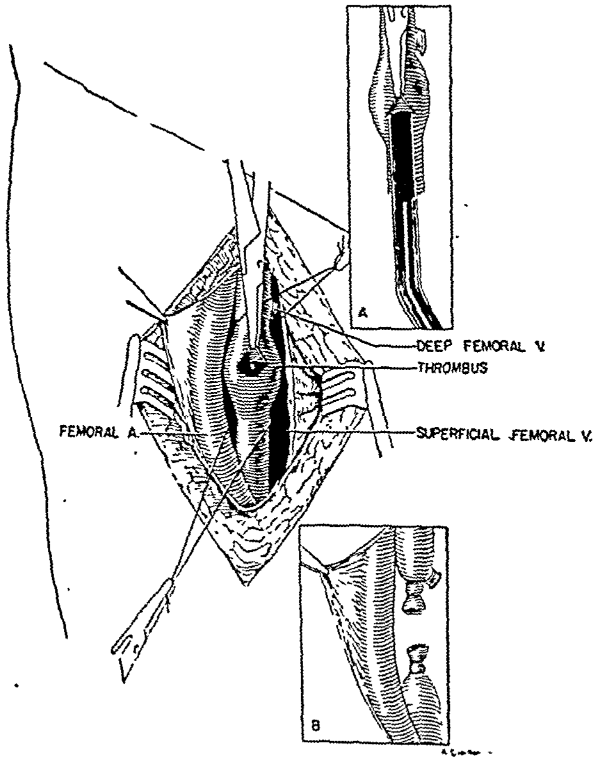

Fig. 1.—An artist's drawing to show the exposure of the superficial femoral vein with thrombectomy. *Note* the vertical incision used; the dilatation of the proximal end of the superficial femoral vein with the deep femoral vein joining it just above this bulge; the retraction of the femoral artery without completely isolating it. Inset *A* shows aspiration of the thrombus with a glass cannula. Inset *B* shows the completely divided superficial femoral vein. Each end is doubly ligated with a ligature and a transfixion suture of cotton and silk.

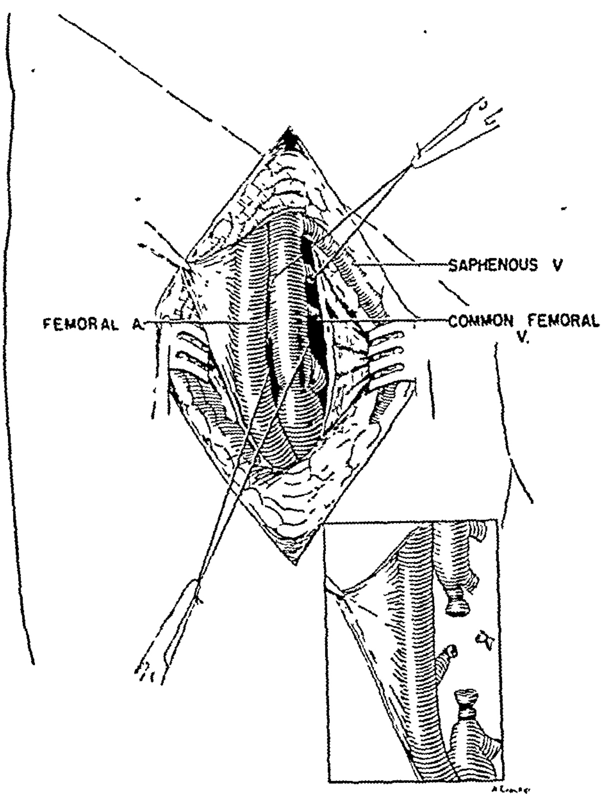

Fig. 2.—An artist's drawing to show the exposure of the common femoral vein proximal to junction of the superficial femoral and deep femoral veins. This is a more difficult operative procedure than interruption of the superficial femoral vein and should be used *only by* the experienced surgeon when thrombosis involves the two veins. The inset shows the completely ligated and divided vein and in addition two of its tributaries to give sufficient length of vein to permit safe interruption with division.

The importance of interrupting the superficial vein at the highest possible level is emphasized by our only fatal case of embolus following prophylactic interruption. The superficial femoral vein had been divided 3 cm. below the vena profunda femoris, and at autopsy this segment of vein was thrombosed. This could easily have acted as a nidus for the propagation of thrombus of sufficient extent to occlude the pulmonary arteries when the whole mass became detached eight days later. This patient was fat and had a large ventral hernia to be repaired. The prophylactic venous interruption was justified on the basis of age, obesity and the character of the operation needed. There was no evidence that phlebothrombosis existed at the time of interruption of the femoral veins, and it must be assumed that such a condition occurred afterward. It has been pointed out by Homans[8] and others that veins should be divided with a minimal segment below a free current of blood. Unless one isolates the vena profunda femoris sufficiently to determine the level of bifurcation of the common femoral vein there is danger of leaving too long a proximal stump of the superficial femoral vessel.

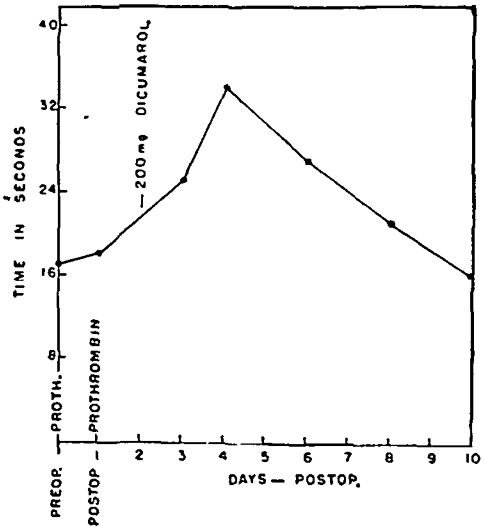

Fig. 3.—Typical response to one dose of Dicumarol.

Up to the time of this report there have been 1,281 patients subjected to interruption of the femoral veins for the prevention and treatment of thrombosis and embolism in the Massachusetts General Hospital (table 3). No patient has died and no patient has lost an extremity as a result of these procedures. The majority of the house cases have been operated on by the resident surgeons. This has caused us to minimize the operative procedure too much and has led men to undertake the operation who had not studied the problem. Confusion has occurred regarding the exposure of the desired segment of the vein, and serious complications have resulted. It has come to our attention that these unnecessary sequelae are obviously the result of carelessness. The unexpected tearing of a vessel with the resultant bleeding requires the calm and calculating orientation that comes with experience. Incredible as it may seem, we are aware of ligation of the femoral artery, which had been mistaken for the vein, in 1 instance.

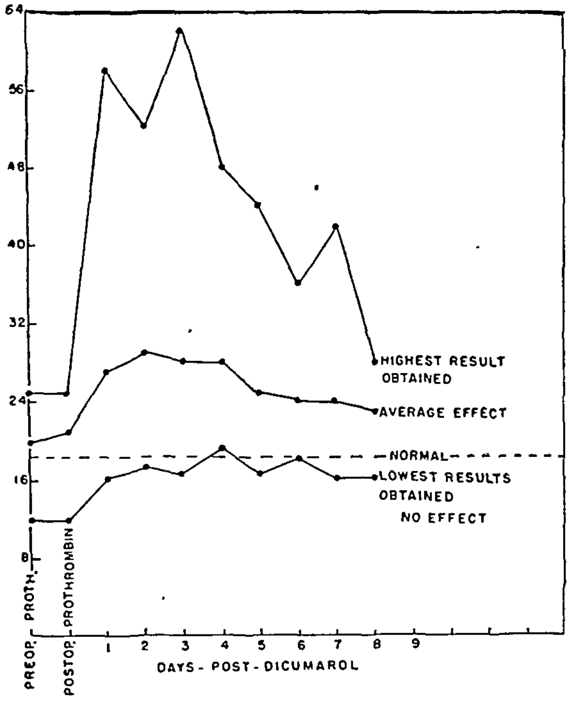

Fig. 4.—Composite curve of response of 165 patients to Dicumarol, measured by the Quick method, undiluted.

DICUMAROL

We have been interested in the use of all accredited methods of treating thrombosis and embolism. The anticoagulant drugs appeared at first likely to solve the problem. Our experience with heparin not being as satisfactory as that of Murray and Best,[9] we were well on our way with use of interruption of the femoral veins when Dicumarol became available. We watched the reports on the use of this drug with much interest and made some sporadic observations of our own. Finally we determined to carry out the controlled clinical experiments that are reported here. It seemed obvious that this drug could not be used indiscriminately on all types of patients and that complete laboratory check on the serum prothrombin level was necessary. It also became evident that the response to this drug was variable (fig. 3). Strong robust persons could tolerate more of it than the older and weaker patients. Since we have two surgical services of identical size, both of which handle the same types of patients, we were able to use one service as a control until the value of Dicumarol could be established in our clinic. We

TABLE 3.—*Interruptions of the Femoral Vein, 1937 to June 1946*

		Indications		
	No. of Patients	Leg Signs as First Symptom, %	Pain in the Chest as First Symptom, %	Prophylactic Interruption, %
1937 to 1942	202	59.0	41.0	0
1943	165	56.3	34.5	9.2
1944	280	41.8	32.5	25.7
1945	392	31.7	23.0	45.3
1946 (June 1)	242	37.6	24.3	38.1
Total	1,281			

TABLE 4.—*Incidence of Interruption of the Femoral Vein, Jan. 1, 1945 to June 1, 1946*

	Age Groups			
	I 1 to 39	II 40 to 64	III Over 65	Total
East Service (Dicumarol)				
Postoperative phlebitis	8	8	3*	19
Prophylactic	0	5	110	115
Admissions	789	985	321	
West Service (control)				
Postoperative phlebitis	9	35	14	58
Prophylactic	0	5	4	9
Admissions	812	963	310	

* Phlebitis developed which required interruption of the femoral vein before prophylactic interruption had been performed.

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[8] Homans, J.: Thrombosis of the Deep Veins of the Lower Leg, Causing Pulmonary Embolism, New England J. Med. **211**: 993-997 (Nov. 29) 1934.

[9] Murray, G. D. W., and Best, C. H.: Use of Heparin in Thrombosis, Ann. Surg. **108**: 163-177 (Aug.) 1938.

selected the age group 40 to 65 for this test and used small doses (200 mg.) of the drug as soon after operative intervention as the patient could take it, i. e., within twenty-four to seventy-two hours. Prothrombin determinations were made preoperatively on both services on patients in this age group. It was found that a small percentage of patients without known hemorrhagic tendencies had an elevated prothrombin time and that about the same number had a lower than normal level (table 4).

From Jan. 1, 1945 to June 1, 1946, 162 patients on the East surgical service received one or more 200 mg. doses of Dicumarol. About two thirds of these patients acquired an appreciable elevation of prothrombin time after one dose of the drug (figs. 4 and 5). About one half of the remaining number reached a satisfactory level after a second dose. Doubtless some of these could have been given larger doses with benefit. However, we have lowered the incidence of thrombosis and embolism to about 25 per cent of that seen in the control group (table 5). In no case did severe hemorrhage occur that could not have been accounted for otherwise. There was occasional evidence of ecchymosis at the site of needle punctures and some bleeding into the tissues near the operative wound, but such manifestations are often seen in patients not receiving Dicumarol. One patient bled from an intestinal anastomosis; this has occurred in other similar operations.

TABLE 5.—*Comparative Data*

Incidence of postoperative phlebitis in the age group 40 to 64 on the East surgical service (Dicumarol treated) and the West surgical service (control), Jan. 1, 1945 to June 1, 1946.

East Service (Dicumarol)	8 cases
West Service (control)	35 cases

In 1 instance of sudden death, thought to be due to embolus ten days after gastric resection, no explanation of death was found at autopsy. Permission for examination of the brain of this patient was refused by the family, and the possibility of cerebral hemorrhage could not be ruled out.

Some persons are decidedly resistant to the drug, while the prothrombin of others will rise from a normal of 18 seconds to 65 seconds on one 200 mg. dose. Figure 6 shows the curve of a resistant patient. This patient had had interruption of the superficial femoral vein and because of further infarcts had had ligatures placed around the common femoral veins. He continued to have infarcts, and Dicumarol was administered. In spite of the fact that no measurable rise in prothrombin time took place until after the third 200 mg. dose had been administered, he had no further infarcts after forty-eight hours had elapsed subsequent to the first dose.

Some of the inquiries which we receive indicate that we have failed to make clear what we mean by "prophylactic" interruption of the femoral vein. After we have evidence that thrombosis of the veins of the legs has occurred, we have looked on phlebotomy, thrombectomy and interruption of the femoral vein more as a method of treatment. In fact, this is done with the idea of preventing further and more massive emboli and is therefore somewhat prophylactic. In our use of this term, however, we have meant to imply that the veins were interrupted prior to any evidence of thrombosis or infarct in order to prevent the occurrence of these complications. As seen in table 4, we are performing the interruption of the superficial femoral veins before, at the time of or shortly after the chief operative procedure in the older age group of patients. These normal veins are interrupted before thrombosis exists, and *in no case save 1 instance (reported previously herein)* has there been any evidence of thrombophlebitis or embolism in this entire group.

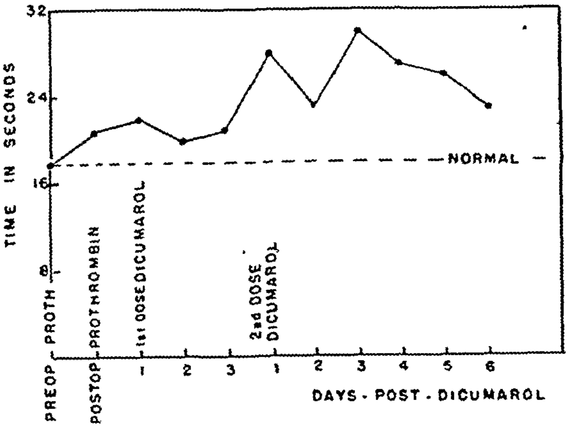

Fig. 5.—Response of 17 patients receiving two doses of Dicumarol, measured by the Quick method, undiluted.

When one considers that the patients selected for this prophylactic measure are—because of age, injury or disease—those most likely to have such a complication develop, it seems clear that greater use of this procedure should be made. Most of our early prophylactic interruptions were performed on the fracture service in patients with fractures near the hip joint. The high incidence of fatal embolus, particularly in intertrochanteric fractures, in our hospital made this procedure a welcome one to adopt. No fatal embolus has occurred in this group of patients since the prophylactic interruption of the superficial femoral veins has been the routine procedure. The urologic serice under the direction of Dr. Fletcher H. Colby and the gynecologic service under Dr. Joe V. Meigs have come to the conclusion that this procedure has much to commend it in preventing the development of thrombosis and embolism in elderly patients.

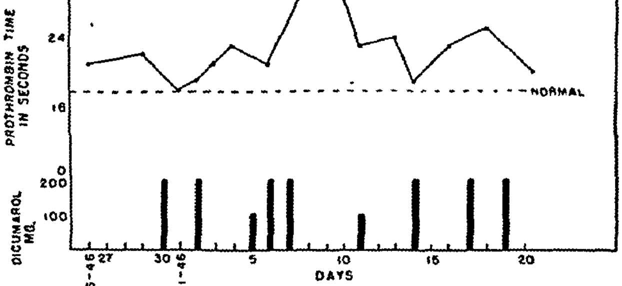

Fig. 6.—Response of Dicumarol-resistant patient, aged 29. Initial infarct, Feb. 24, 1946; bilateral interruption of the superficial femoral veins, February 22; infarct, March 24; bilateral interruption of the common femoral veins, March 25, and infarct, April 22, 1946.

It is difficult to convince the uninitiated that interruption of the normal superficial vein can be harmless. These patients not only have no complaints concerning their legs, but only the slightest amount of transient swelling is observed in the feet and ankles. That they are protected from thrombophlebitis by this method in nearly all instances, we are certain. We have indisputable evidence of the almost certain elimination of serious infarct. After such a procedure the chief complication now seen in modern surgical practice is avoided. It is quite probable that this method of prevention of thrombosis and embolism will be extended into the middle-aged group in many cases and occasionally will be employed in the younger patients whose injury or disease makes such a complication likely.

In this entire group of 1,300 patients there have been only 6 deaths in which subsequent emboli, as proved at autopsy, played a role. One of these interruptions was performed as a prophylactic measure and has been previously discussed. It is of great interest that in all 5 remaining cases interruption of the veins was done because of one or more previous pulmonary infarctions. Two of these procedures were performed at the level of the common femoral veins, and in 3 instances the superficial veins were divided. All these patients, save 1, were in the seventh or eighth decades and were generally debilitated. In each instance the previous infarcts had so reduced the pulmonary vital capacity that subsequent emboli of smaller size resulted in death. Had any of these patients had an initial prophylactic interruption of the femoral veins, as indicated, it is probable that even fewer deaths would have occurred.

SUMMARY AND CONCLUSIONS

1. Interruption of the normal superficial femoral veins at the highest level possible will protect the patient from thrombosis and embolism. This is a harmless procedure, when properly carried out, and should be done within seventy-two hours of the onset of rest in bed or surgical intervention. It is particularly indicated in aged and debilitated patients.

2. Dicumarol given in small doses postoperatively will reduce the incidence of thrombosis and embolism to at least 25 per cent of that seen in controls. It is imperative to have regular laboratory determinations on the plasma prothrombin time before and during the administration of the drug. In patients with hemorrhagic tendencies, of any age, and in arteriosclerotic persons it should not be used.

3. Phlebothrombosis and early thrombophlebitis is best treated by phlebotomy, thrombectomy and interruption of the superficial femoral veins on both sides. This reduces the risk of fatal embolism and diminishes subsequent infarcts. It also shortens the convalescence and reduces the inflammatory reaction in and about the deep veins.

4. If infarcts continue after interruption of the femoral veins, anticoagulants should be used. Heparin will elevate the clotting time immediately, and this anticoagulant effect can be maintained with the slower acting Dicumarol.

5. If thrombophlebitis progresses to produce pain and swelling after interruption of the femoral veins, procaine block of the lumbar sympathetic nerves will relieve pain and hasten recovery.

6. Interruption of the inferior vena cava should be performed only for repeated septic infarcts that by signs and symptoms indicate their source to be from the pelvic or iliac veins.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. AYCOCK AND HENDRICK, LOEWE AND HIRSCH, AND ALLEN, LINTON AND DONALDSON

Dr. Ross Veal, Washington, D. C.: Differential diagnosis is most important, for proper treatment depends on correct diagnosis. All of us should recognize acute thrombophlebitis, particularly the femoroiliac thrombophlebitis. Phlebothrombosis presents a much more serious problem. In the early stage there may be no symptoms. Later these cases may simulate thrombophlebitis in local and general signs and symptoms. Regardless of the stage, until complete organization there is always present the potential danger of pulmonary embolism. In my experience in 1 of every 4 patients, if the appropriate vein is not ligated, pulmonary embolism develops. With regard to the use of venograms as an aid in the diagnosis of venous thrombosis of the lower extremities, it was believed several years ago that this was going to be an important aid in determining the course of therapy. This led to a false sense of security in regard to some patients, because the venograms did not demonstrate the presence of a clot in their veins. These patients were allowed to go untreated and fatal pulmonary emboli occurred. I have therefore discarded the use of venograms as a measure of how these patients should be treated. As to the point of ligation, my associates and I differ somewhat from the Boston group. We have always felt that we should ligate a major vein through a normal segment of that vein above the clot. If ligation is performed through a diseased portion of the vein, too frequently thrombosis develops above the point of ligation. Our rule now is to ligate through a normal segment of the vein, above the diseased portion or clot and just distal to a main tributary. This means that ligation may be performed through the femoral vein just below the saphenous in some and through the common iliac vessels in others; in still others it becomes necessary to ligate the vena cava. We have used local anesthesia in many patients, but we now favor the use of pentothal sodium and oxygen. We have often found that after pulmonary infarcts these patients are decidedly apprehensive and sometimes difficult to handle under local anesthesia. We believe that under an expert anesthetist anesthesia by means of pentothal and oxygen works well and is safe in such patients. In ligation of the major veins there is a danger which has not been stressed, and that is a sudden congestion of the limb below the level of ligation. We have had 4 instances in which, immediately after ligating a major vein, the leg became enormously swollen and the veins tremendously dilated, with petechial hemorrhages occurring throughout the tissues. Fortunately we recognized this quickly and by elevation of the leg to an extreme level and prompt blocks of the sympathetic nerves the circulation was quickly corrected. All 4 patients recovered without any loss of tissue and without any evidence that the congestion had caused permanent damage. I do not consider that after ligation of the major veins the extremity is perfectly normal. One must anticipate some swelling in the majority of these cases, depending on how extensive the thrombosis was at the time of ligation. If the clot has extended all the way up to the femoral triangle most of these patients are going to have some postoperative edema, but if that edema is controlled from the onset many will recover completely. However, if swelling of the leg continues, we may expect trouble with the skin, such as eczema and ulcers. Therefore, all our patients leave the hospital with a properly fitted elastic stocking, which they wear until there is no longer any swelling.

Dr. Alton Ochsner, New Orleans: Whereas in Boston they ligate everything, in New York they ligate nothing. We take the rational middle ground and ligate those that should be ligated and don't ligate those that need not be ligated. Dr de Bakey and I believe that there is a definite difference between the two types of venous thrombosis—phlebothrombosis and thrombophlebitis—and although the patient with phlebothrombosis who is fortunate enough not to die as a result of a detachment of his thrombus will ultimately develop an inflammatory process so that the thrombus becomes attached, that is not the way most cases of thrombophlebitis begin. On the other hand, we are convinced that thrombophlebitis usually begins as a primary inflammatory lesion in the vein. The cause may be bacterial, it may be toxic or it may be allergic, but the process fundamentally is different from that in phlebothrombosis. Dr. Hendrick has emphasized the importance of prophylaxis; this is extremely important. Not only can pulmonary embolism be prevented by preventing the detachment of the clot when it is once formed, but one can usually prevent the formation of the thrombus. Dr. Hendrick mentioned the value of certain postures and the danger of other postures. We go farther than that. We feel that any patient past 40 years of age—and we would agree with Dr. Allen that age is a factor—who has trauma from any cause, operative or otherwise, should have his lower extremities compressed from his toes to his groin and should be made to contract his muscles actively, and particularly his calf muscles, against a resistance. I thoroughly agree with Dr. Linton that ambulation means ambulation, and the worst thing that one can do is let a patient get out of bed and sit. It is far better that the patient remain in bed in a horizonal position and actively and forcibly bend or flex his foot against a resistance. There will be a few cases of phlebothrombosis which will develop even under this therapy. It is a rule on our service that twice daily the calves of patients are compressed, and forceful dorsal flexion of the foot is carried out, as suggested by Dr. Homans. In this way we can detect phlebothrombosis in its incipiency and, as Dr. Linton has suggested, we think that these cases require ligation. I have seen too many patients in consultation in whom anticoagulants have been used with the idea that the patient was perfectly safe, and yet they have had repeated emboli. I am sure that anticoagulants will prevent the formation of new thrombi, but I am also sure that they will not guarantee against the detachment of the thrombus already there. I have no objection to anticoagulants; I think it is well to use them. The use of anticoagulants is primarily prophylactic, as Dr. Linton says, but it is dangerous to use and to rely on such drugs alone, because the clot that is already there and not detached can still become detached, even though one does prevent the formation of other thrombi.

Dr. Frederick W. Bancroft, New York: I wish to protest against Dr. Ochsner's statement that we never ligate veins in New York. It has been my good fortune to work with Dr. Loewe in several cases and to have used his menstruum in at least 10 patients, independently. There is no doubt that the heparin-Pitkin menstruum provides the anticoagulant effect and is infinitely superior to the continuous intravenous administration of heparin. I agree with Dr. Loewe that venostasis is a decidedly important factor in thromboembolic diseases. As an example, I might mention 4 cases of phlebothrombosis of the femoral vein occurring during rest in bed, after an attack of coronary occlusion. After the removal of the clot from the iliac vein it was possible to mobilize these patients immediately, whereas the use of anticoagulants would have kept them in bed for a longer period. While I agree with Dr. Loewe that a majority of cases of phlebothrombosis originate in the deep veins of the calf, there is another type starting from the uterine veins, and pulmonary infarcts have resulted before there is evidence of retrograde thrombosis of the thighs or legs. There are three types of cases in which we would hesitate to use anticoagulants; first, immediately after pregnancy; second, in phlebothrombosis following hemiplegia from hemorrhage, and third, in phlebothrombosis following coronary occlusion. I disagree with Allen and his co-workers that it is necessary to ligate both sides every time. In my experience if the thrombus starts from the veins in the calf and is seen early and that vein is ligated, I have never seen it occur on the other side. On the other hand, when it has started in the pelvis, I have had experience to indicate that the veins on both sides should be ligated simultaneously. Dr. Loewe has made a great contribution in his heparin-Pitkin menstruum, in making the administration of heparin much simpler, safer and less expensive.

Dr. Geza de Takats, Chicago: In a group of 251 patients on our service, we have seen 1 fatal and 2 nonfatal pulmonary emboli, so that our treatment has justified itself at least in a small series of cases. At least 40 per cent of these patients are admitted or are seen with thoracic symptoms before any localizing symptoms occur in the periphery. With the combination of oxygen, atropine and papaverine, and also heparin, a number of lives can be saved. It is difficult to put this on a statistical basis, because a number of patients with pulmonary emboli recover, but the response to this treatment is often dramatic. Symptoms of a pulmonary embolus are due to a sudden obstruction of the pulmonary arterial tree plus an intense vasospasm of the unaffected part of the pulmonary artery, a bronchial spasm and a sudden coronary insufficiency. When the origin of the embolus is recognizable we ligate above the level of the recognized thrombus. This might be the superficial femoral, the common iliac or the vena cava. When the origin of the embolus is unknown, we do not use any phlebograms but institute anticoagulant therapy, by which we mean heparin, for two days in intermittent doses—50 mg. every four hours intravenously—and Dicumarol. It is important that Dicumarol be given in adequate amounts, so that the isothrombin level is at least 50 per cent below normal. If one does not do that, one is not really protecting the patient. One or two doses of 200 mg. of Dicumarol are nonprotective. We have discharged a number of patients on small amounts of Dicumarol; those, for instance, who have had arterial emboli following coronary occlusion. Such patients take 200 or 300 mg. of Dicumarol every week, and the incidence of emboli in this group has been just as high as in the ones who have not received it; this drug must be given in therapeutically effective doses. When one suddenly stops the administration of heparin or of Dicumarol, there may be a thrombosis. We have observed such an occurrence in 3 instances. If treatment with heparin or Dicumarol is to be discontinued, it must be stopped slowly, and it must not be continued in the ambulant patient. There is no reason why the surgeon should not use anticoagulants in conjunction with surgical therapy, just as a surgeon will amputate a diabetic toe and still use insulin. Dr. Loewe's subcutaneous heparin is the most promising new development, and perhaps improvements can be made to make the solution less painful and irritating so that the general medical practitioner can use it. At present the combination of surgical treatment with anticoagulant therapy gives the smallest incidence of fatal pulmonary emboli.

Dr. Kurt Lange, New York: After we had found that heparinization was able to prevent the gangrene subsequent to frostbite, Dr. Loewe was kind enough to let us try some of our frostbite lesions on his patients who were to be heparinized anyway for endocarditis, and although the heparinization in these patients with the heparin-Pitkin menstruum succeeded excellently in keeping the clotting time at the desired level, to between 30 and 60 minutes, it was rather conspicuous that the patients had great pain at the site of the injections. We do not put too much attention on that, for the advantage of an intramuscular heparin is such a great one, especially in the treatment of thromboembolic disease, that we think it would not matter whether or not it was painful. We were especially enthusiastic, for we thought that in our animal experimentation we would now be able to give heparin once a day and then forget about the animal for twenty-four hours. When we did that we found that of 160 animals thus treated (120 rats and 40 rabbits) 150 died at the third or subsequent day, with the clotting time between 30 and 60 minutes at the time of their death. At autopsy it was found that all of them had died from anemia, sanguinating into the site of the injection, where tremendous hematomas were found. That means that apparently the small capillary bleeding which was caused by the injection could not stop when large deposits of heparin were underlying this bleeding. I would like to ask Dr. Loewe whether in his cases in which autopsies were performed these sites of injection were examined or whether aspirations were done at the sites of injection to find out if the pain is not the result of a subcutaneous hematoma which, in the human being, does not become as great in extent on account of the local circumstance of the tissue.

Dr. Ralph Adams, Boston: I wish to mention another group treated in Boston. In something over 9,000 operations performed during the last four years, we have recognized thromboembolic phenomena in 170 patients treated with heparin and Dicumarol and in 8 by ligation. We lost 1 patient who had been adequately treated with the anticoagulants; we lost

1 patient, after bilateral ligation of the vein, who had one single dose of Dicumarol and a second patient who was Dicumarol-resistant. In this same period we had 40 deaths from pulmonary embolism in patients who had no recognized sign of thrombosis or embolism preceding the fatality. The question is, should we have performed ligations to prevent this tragedy in all patients over the age of 40, who in our group represent nearly 50 per cent of those having major operative procedures? That would amount to approximately 4,500 ligations. The second question is, if we are to use anticoagulation prophylactically, when should it be started postoperatively? Since we have started the energetic use of foot exercises, with preoperative instructions in writing in all languages necessary to be read by our heterogeneous group of patients the incidence of thromboembolic phenomena has been reduced by about 50 per cent.

Dr. James W. Hendrick, Baltimore: There are so many important phases of this subject, it is difficult to cover them all in the time allotted. Since the University of Maryland hospital is a state institution, a large number of patients in the older age group are admitted. Consequently, an appreciable number are candidates for venous thrombosis, unless caution is exercised to prevent this complication. We consider, as Dr. Ochsner has stressed, that prevention is the main factor. Members of our resident and nursing staff are taught to carefully note any indication of this complication. Also each patient is given instructions to help prevent it, as was mentioned by Dr. Adams of the Lahey Clinic. Relative to Dicumarol therapy, we have found it to be contraindicated in prostatic and thyroid surgery, and in disease of the liver. We think it should be used with caution and only given when careful determinations of prothrombin time can be made every twenty-four hours. We have seen several patients that were sent in from the surrounding territory in whom massive hemorrhages had developed following Dicumarol therapy after a surgical procedure. Such patients required large doses of vitamin K to prevent death. We would like to stress again that a careful differential diagnosis should be made between phlebothrombosis and thrombophlebitis. If phlebothrombosis is present paravertebral blocks should not be done. But thrombophlebitis will respond to paraverterbral blocks. This procedure was first reported by Dr. Ochsner and his group. We inject the first, second, third and fourth lumbar ganglions with 10 cc. each of a 1 per cent solution of procaine hydrochloride. We also inject the second and third ganglions each with 10 cc. of monobromosaligenin (Bromsalizol) solution. The latter solution was developed by Dr. Ferdinand Lee and his co-workers at the Baltimore City Hospital and the Johns Hopkins Hospital. The procaine solution acts instantly but begins to lose its effect after twelve hours to twenty-four hours; monobromosaligenin is slower, but the effect will last from four to eight days. This procedure is not difficult to execute and can be used by physicians over the entire country, who have been properly trained in the technic of administration.

Dr. Robert R. Linton, Boston: In answer to Dr. Adams' question, what are we going to do with 4,500 patients over 40 years of age who undergo major surgical operations at our clinic? I did not mean to infer that every patient over 40 years of age should have his femoral veins interrupted. I meant to stress the importance of prophylactic interruption of the femoral veins in patients over 50 years of age who are operated on for abdominal cancer. It is possible after a little training to do bilateral interruptions of the superficial femoral veins in a short while. It usually takes not longer than twenty minutes. Until it has been proved that prophylactic interruption of the superficial femoral veins is not adequate protection against pulmonary embolism, I believe that it is well worth while spending anywhere from twenty minutes to half an hour to perform this simple procedure. To date we have carried out this procedure in some 358 patients. There was 1 death in this group of prophylactic interruptions. At autopsy it was seen that the interruption was about 3 cm. below the junction of the superficial and profunda femoris veins. This definitely was a technical error, as a thrombus was found in this blind segment of superficial femoral vein below the profunda branch. The junction of the superficial and the profunda femoris veins must be visualized, and if the superficial femoral vein is tied it must be done at the junction, so that there is no blind segment of vein distal to the point at which the superficial and profunda femoris unite to form the common femoral vein. Anticoagulants should be used mainly in the prophylaxis of venous thrombosis. They should be used also after the femoral veins have been interrupted if a secondary sublethal embolus develops. One of the chief arguments against interruption of the femoral veins is that one must surely damage the extremity by interrupting its main venous channel. At first we were fearful of this, but after well over 2,000 such interruptions without the development of any serious consequences in these patients, we feel assured that it is a safe procedure. We as well as others are now interrupting the femoral veins in the postphlebitic group of patients that present the chronic indurated ulcers that have been so hard to heal in the past. From a physiologic point of view it must be realized that these large venous channels in the lower extremity are not necessary as conduits for blood; they are mainly reservoirs of blood which can be interrupted without damaging the patient's health or his extremities.

Dr. Leo Loewe, Brooklyn: We have successfully treated with heparin Pitkin menstruum patients in whom bilateral ligation of the femoral veins failed to prevent recurrent pulmonary embolization. Dicumarol failures which were referred to us were then successfully treated with heparin/Pitkin menstruum. The disadvantages of Dicumarol have been pointedly demonstrated by Dr. Linton; the dosages are haphazard, and propagation of thrombus—even pulmonary embolization—can occur despite apparently adequate doses. In addition to being toxic and difficult to control the action of the drug is delayed. Its chief virtue is that it can be administered by mouth. The issue of venous ligation versus anticoagulant therapy requires more statistical proof before it can be resolved. We have had no instance of lethal pulmonary embolization since our optimum treatment program has been established. The painful local reaction mentioned by Drs. de Takats and Lange has also been observed with Pitkin menstruum preparations containing agents other than heparin. This objection has now been remedied by the use of more physiologically acceptable gels. There is the question of local hemorrhage raised by Dr. Lange. His experience has been limited to animal experiments. Those of us who have used the heparin/Pitkin menstruum, including Drs. Bancroft, Blakemore of the Columbia-Presbyterian group and Evans of the Lahey Clinic, have never encountered anything that has purported to be hemorrhage. In heparinizing over 200 rabbits and about 400 patients, totaling several thousand injections, we did not see the reactions described by Dr. Lange in his experiments with rats. The reason is obvious. If he would analyze his dosages he would find that in a definite attempt to raise the coagulation time to levels consistent with his experimental requirements he has given his rats 15 to 20 mg. of the drug daily. This is the equivalent by weight to a daily human dose of about 2,500 mg. as contrasted with the recommended human dose of 300 mg. every other day.

Pulmonary Air Embolism.—Basic to an understanding of pulmonary (venous) air embolism is a clear conception of its differentiation from the arterial form of air embolism. Although both depend for their effects on the presence of air in the circulation, the site of entrance of the air determines its distribution within the vascular system and is therefore extremely important. In the pulmonary form, air enters one of the systemic veins and is carried to the right heart and pulmonary circulation and depends for its effects on mechanical obstruction of the outflow tract of the right ventricle. Fairly large amounts of air are needed to produce this effect. In arterial embolism the air gains entrance to the pulmonary venous channels and is propelled from the left ventricle to those systemic arteries which supply the superiorly located portions of the body. Since a small amount of air can effectively block a medium sized artery, serious consequences may result when a few cubic centimeters of air enter the pulmonary vein and are carried into either the coronary, or cerebral, circulation, or both. . . . As would be expected, the clinical picture in the two forms of embolism is totally different.—Durant, Thomas M.; Long, Joan, and Oppenheimer, Morton J.: Pulmonary (Venous) Air Embolism, *Am. Heart J.*, March 1947.

THE TREATMENT OF SERUM SICKNESS WITH BENADRYL

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The recent report of State and Wangensteen[1] was the first concerning the use of a drug having a satisfactorily specific therapeutic action in the treatment of serum sickness. They successfully employed intravenous injections of procaine hydrochloride to abolish the manifestations of serum sickness. In the past two years we have had an opportunity to observe the effect of Benadryl hydrochloride, a drug related to procaine, in the treatment of 10 patients with serum sickness. These patients responded to the oral administration of the drug.

STUDY MATERIAL

Serum sickness developed in our patients as a complication of serotherapy for a variety of conditions; 4 infants and 1 child from treatment with meningococcus antitoxin, a fairly crude horse serum preparation; 1 child from treatment with polyvalent antivenin, also a relatively crude horse serum preparation; 1 infant from treatment with diphtheria antitoxin, a more highly refined horse serum preparation, and 2 infants and 1 child from treatment with type B anti-Hemophilus-influenzae serum, a highly refined rabbit serum preparation. Brief reports of the individual cases follow.

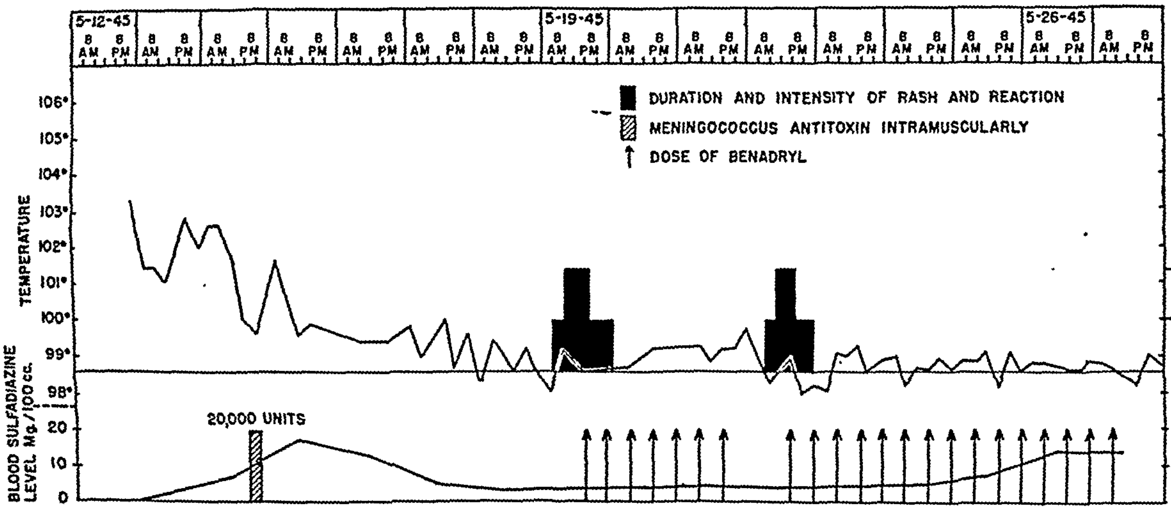

Fig. 1 (case 2).—Serum sickness following meningococcus antitoxin and its response to therapy with Benadryl hydrochloride.

REPORT OF CASES

Case 1.—W. N., a white boy aged 2 months, received 10,000 units of meningococcus antitoxin intramuscularly on March 7, 1945, for meningococcic meningitis. The preliminary intradermal sensitivity test was negative. Ten days later there developed a generalized urticarial eruption. Treatment with Benadryl hydrochloride, 50 mg. orally every twelve hours, was instituted. There was no response during the succeeding forty-eight hours. The dosage was increased to 50 mg. of the drug every six hours, and the rash disappeared completely after the second dose. The therapy was discontinued after another twenty-four hours. There was no recurrence of the rash. The rash was this patient's sole manifestation of serum sickness.

Case 2.—C. S., a white boy aged 3 months, received, by intramuscular injection, 20,000 units of meningococcus antitoxin on May 14, 1945, in the treatment of meningococcic meningitis. He had shown a negative intradermal sensitivity test. Five days later a generalized urticarial eruption appeared. Benadryl therapy, 50 mg. orally every eight hours, was instituted on May 19, and the rash completely disappeared following the second dose. Therapy was discontinued on May 21, and the rash reappeared on May 22. It again disappeared after the second 50 mg. dose with an eight hour interval. Therapy was continued until May 27. There was no subsequent recurrence of symptoms. Elevation of the temperature to 99.8 F. was the only other manifestation of serum sickness in this case. The response to therapy is shown in figure 1.

Case 3.—P. P., a white girl aged 2 years, who had meningococcic meningitis, contracted an urticarial eruption on Feb. 11, 1945, eight days after the administration of 20,000 units of meningococcus antitoxin. The intradermal sensitivity test had been negative. Treatment with Benadryl, 50 mg. every twelve hours, failed to relieve the symptoms, but on May 14 an increase of the dosage to 50 mg. of the drug every eight hours resulted in complete disappearance of the rash. It was thought that the serum sickness which was mild might have terminated. The therapy was stopped, and in fourteen hours there was a recurrence of the rash. Treatment with 50 mg. of Benadryl every eight hours relieved all symptoms. Treatment was discontinued without recurrence on May 16. This patient showed only an elevation of temperature to 100 F. in addition to the urticarial rash.

Case 4.—S. H., A white boy aged 8 years, received 15 cc. of antivenin on Aug. 1, 1945, for a copperhead (Agkistrodon mokasen) snake-bite. An intradermal test with the antivenin had been negative. A generalized macular erythematous eruption developed nine days later, and the boy was obviously ill and irritable, but no other symptoms of serum sickness were observed. Treatment with Benadryl, 50 mg. orally every four hours, caused the disappearance of the rash after the second dose. He was also generally improved. The Benadryl dosage was reduced to 50 mg. every eight hours and was discontinued after three such doses. Fourteen hours later the rash reappeared. Therapy with 50 mg. of Benadryl every eight hours was reinstituted, and there was no recurrence when it was discontinued on August 27.

Case 5.—B. M., a white boy aged 4½ years, with meningitis due to type B H. influenzae had a diffuse macular erythematous eruption which developed ten days after the initial intramuscular injection of type specific rabbit antiserum on Dec. 3, 1945. He received 125 mg. of agglutinin antibody nitrogen equivalent on the first day and an additional 25 mg. on the second and fourth

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From the Department of Pediatrics, Vanderbilt University School of Medicine.

Benadryl, beta-dimethyl aminoethyl benzohydryl ether hydrochloride, was supplied by Parke Davis & Company.

[1] State, D., and Wangensteen, O. H.: Delayed Serum Sickness, J. A. M. A. **130**: 990 (April 13) 1946.

days. Shortly after the rash appeared he was given Benadryl, 50 mg. orally. The rash faded promptly but recurred after sixteen hours. Treatment with 50 mg. of the drug every eight hours resulted in disappearance of the rash after the second dose. At the end of the third day after the onset of serum sickness administration of the drug was discontinued without recurrence of the rash. There were no other manifestations of serum sickness in this case.

Case 6.—R. S., a boy aged 2 years with meningitis due to type B *H. influenzae* was given specific rabbit antiserum containing 100 mg. agglutinin antibody nitrogen equivalent intramuscularly on Jan. 6, 1946. The intradermal sensitivity test with a 1 : 10 dilution of serum was 2 plus positive. Serum containing 25 and 50 mg. agglutinin antibody nitrogen equivalent was administered on the second and third days, respectively. On January 16 there developed a macular erythematous eruption and urticaria. The child also vomited but did not show other manifestations of serum sickness. He was given 50 mg. of Benadryl initially, followed in four hours by 40 mg. of the drug. There was little improvement in the rash so the dosage was increased to 50 mg. every four hours, with some, but incomplete, improvement. After three such doses a further increase to 60 mg. of the drug every four hours resulted in pronounced improvement; the urticarial component disappeared, but there was some rash throughout the forty-eight hours of therapy at this level. However, the patient was much less irritable and the vomiting associated with the rash ceased.

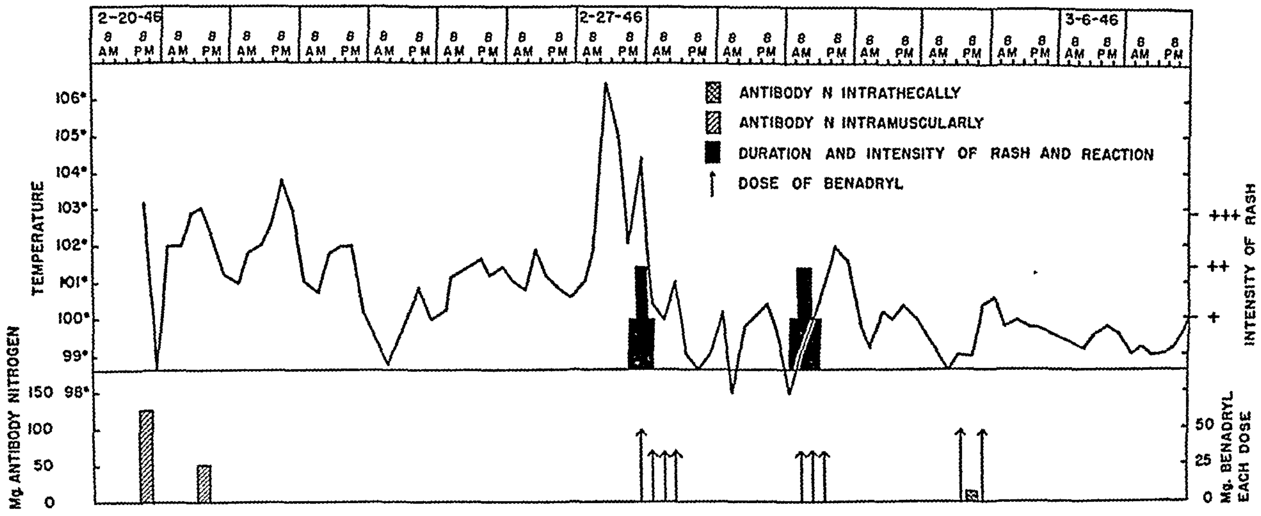

Fig. 2 (case 10).—The response of serum sickness following the administration of anti-*H. influenzae* serum type B (175 mg. of agglutinin antibody nitrogen equivalent) to treatment with Benadryl hydrochloride.

Case 7.—F. T., a white boy aged 20 months, was admitted to the hospital on Jan. 11, 1946 with acute laryngeo-tracheobronchitis. He had received injections of 10,000 units of diphtheria antitoxin on each of three successive days prior to hospitalization. On January 16, eight days after the first injection of antitoxin, a generalized erythematous macular eruption developed. Treatment with 50 mg. of Benadryl every four hours was started. In two hours after the initial dose the rash had completely disappeared. No recurrence was noted when therapy was discontinued on January 18. This was an extremely mild case with no symptoms except the rash.

Case 8.—R. L., a white girl aged 4 months with meningococcic meningitis, was given 10,000 units of meningococcus antitoxin intramuscularly on Jan. 30, 1946. The conjunctival sensitivity test with a 1 : 10 dilution of the antitoxin had been negative. Because of the extremely poor condition of the patient an additional 10,000 units of antitoxin was given about ten hours after the initial dose. On February 4, five days after the initial administration of antitoxin, there developed a mild urticarial eruption on the abdomen of the patient. The next day the rash was generalized and was confluent over the trunk. The infant also vomited several times, but there was no fever or lymphadenopathy. Treatment with elixir of Benadryl, 30 mg. every four hours, was instituted, and only a few lesions remained one hour after the second dose had been given. The patient, however, frequently vomited the elixir and on February 6, after she had lost two doses in this manner, the rash recurred. Though the dose of elixir was increased to 60 mg. every four hours the continued vomiting was enough to void the treatment, and the rash persisted. Benadryl powder, 100 mg., was substituted for the elixir on February 8. The rash faded completely within four hours. Maintenance therapy with 50 mg. of Benadryl every four hours was continued. No recurrence of symptoms was noted subsequent to cessation of therapy on February 10.

Case 9.—J. M., a white girl aged 3½ months with meningitis due to the Diplococcus mucosus was given 10,000 units of meningococcus antitoxin on Feb. 2, 1946, after a negative conjunctival test with a 1 : 10 dilution of the antitoxin. Four days later there developed a rather fine diffuse macular and urticarial eruption; she began to vomit and her temperature rose from 99 to 102.8 F. Because of the seriousness of her reaction she was given a large initial dose of Benadryl, 100 mg., which was followed in four hours by a 50 mg. dose. The rash cleared completely in about one hour after the second dose. The fever and vomiting ceased twelve hours after the initial dose of Benadryl. Benadryl therapy was discontinued after five doses, and in twelve hours the rash reappeared. Benadryl therapy was reinstituted, the patient receiving 75 mg. initially followed by 50 mg. every four hours for an additional two days. There was complete relief with no recurrence after the discontinuance of treatment.

Case 10.—C. E., a girl aged 9 months with meningitis due to type B. H. influenzae received an intramuscular injection of type specific rabbit antiserum containing 125 mg. agglutinin antibody nitrogen equivalent on Feb. 20, 1946. The preliminary intradermal sensitivity test had been negative. On the following day an additional 50 mg. was given because she had an inadequate serum antibody titer. Seven days after the initial serum injection there developed a macular erythematous urticarial eruption over the entire body of the patient. She had shown progressive improvement to this point, though the infection had not been completely controlled. With the development of the serum reaction she became critically ill, showing Cheyne-Stokes respiration, temperature elevation to 106.4 F. and slight cyanosis. Treatment with Benadryl, 50 mg. for the initial dose and 37.5 mg. every four hours for four doses, resulted in disappearance of the rash and definite improvement in her general condition. At the end of twenty-four hours the administration of Benadryl was discontinued because of increasingly severe vomiting. The child also had as a further complication moderately severe alkalosis as a result of the sodium bicarbonate given in conjunction with her sulfadiazine therapy. Thirty-six hours later there again developed fever and a rash, but the patient responded rapidly to therapy with Benadryl, 3 doses of 37.5 mg. each given at four hour intervals. On March 4, forty-eight hours after receiving the last dose of Benadryl, she was given 15 mg. of type specific rabbit serum intrathecally. A prophylactic dose of 50 mg. of Benadryl was given at 4 p. m., the serum was injected at about 5 p. m. and an additional dose of Benadryl was given at midnight. Her recovery from this point was uneventful. There was no evidence of immediate or delayed serum reaction after the intrathecal injection. This patient's response to Benadryl therapy is summarized in figure 2.

COMMENT

Serum sickness is a fairly frequent complication of heterologous serotherapy. While it occurs much more commonly after the use of crude serum or relatively crude preparations, such as the currently available meningococcus antitoxin, it also follows the use of highly refined antibody globulin preparations. This is shown by the occurrence of serum sickness in cases 5, 6 and 10 after the administration of highly refined anti-H. influenzae serum.

The occurrence of serum sickness constitutes a disagreeable and troublesome illness in otherwise healthy persons, but it is often a serious complication when it occurs during the course of meningitis, tetanus or diphtheria.

The histamine concept of serum sickness, first advanced by Dale and Laidlaw[2] in 1910, has gained wide acceptance. The studies of Loew and his associates[3] showing the comparative efficacy of beta-dimethylaminoethyl benzohydryl ether hydrochloride (Benadryl) in combating histamine aerosol-induced bronchiolar constriction in guinea pigs suggested that the drug would be useful in the treatment of a variety of allergic disturbances. Although a number of early reports have appeared showing its effectiveness in the treatment of urticaria, there has been little said specifically in regard to its effectiveness in serum sickness. Friedlaender and Feinberg[4] report the control of 3 cases of "serum sickness-like" reactions associated with penicillin therapy, and Todd[5] reported on the control of whealing reactions subsequent to skin tests with horse serum, but we have been unable to find any reports on the use of Benadryl hydrochloride in the treatment of true serum sickness.

The report of State and Wangensteen[1] and more recently that of Applebaum, Abraham and Sinton[6] concerning the use of intravenous procaine therapy for serum sickness attests the need of remedies more effective and certain than epinephrine, theophylline ethylenediamine and calcium gluconate.

Our studies have shown that the early, and presumably the later and severer, symptoms of serum sickness can be completely controlled by Benadryl. The mode of action of this drug has not been entirely explained. It has been shown that it abolishes the vasodilatation from histamine and that it serves generally as an antispasmodic agent. Repeated oral doses of Benadryl as high as 8 mg. per pound (0.5 Kg.) of body weight (in small infants) were tolerated without side reactions. Nausea did occur in several instances but was troublesome only once, in case 10. It occurred more frequently in the use of the elixir than in the use of the powder. We encountered no difficulties in the use of the powder even in small infants, into whose mouths the capsule was simply emptied, using care to prevent aspiration. There was no observable local effect on the mucous membranes, though such topical application serves to partially anesthetize the tongue and buccal surfaces.

The effective dose of Benadryl for the treatment of different allergic manifestations is still being studied. From our cases it is apparent that doses of 50 mg. of the drug may not always be adequate to control the rash of serum sickness even in an infant 4 months of age, as in case 6, or a child aged 2, as in case 7. It is probable that the drug is effective in proportion to its concentrations in the tissues and that it will require two or three times as much per pound (0.5 Kg.) of body weight to control symptoms in infants as compared with adults.

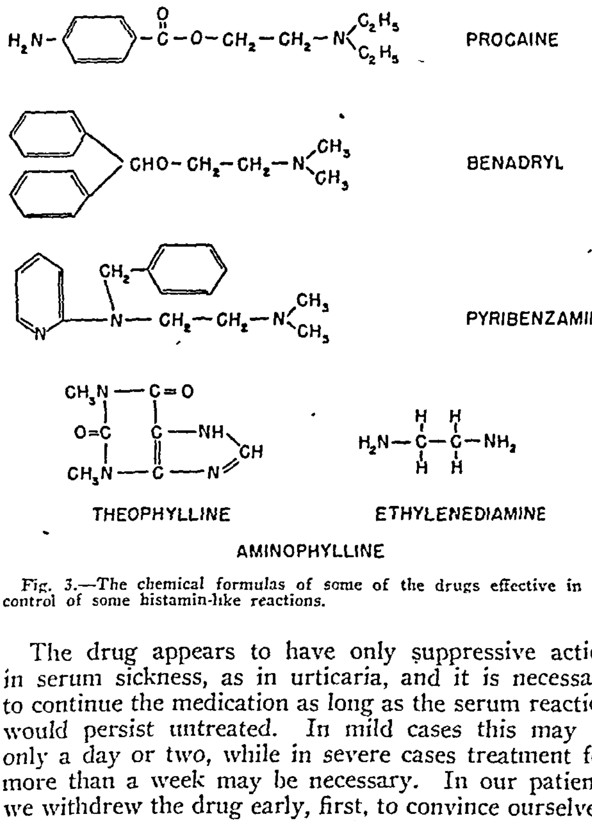

Fig. 3.—The chemical formulas of some of the drugs effective in the control of some histamin-like reactions.

The drug appears to have only suppressive action in serum sickness, as in urticaria, and it is necessary to continue the medication as long as the serum reaction would persist untreated. In mild cases this may be only a day or two, while in severe cases treatment for more than a week may be necessary. In our patients we withdrew the drug early, first, to convince ourselves, by allowing relapses, that the drug was truly effective and that we were not simply observing mild abortive reactions; and second, to ascertain how long the effect of an individual dose would last. The relapses which followed withdrawal in several instances confirm the real effect of the drug. The period of effect of the drug is not so clear but would seem from our cases to be somewhere between six and twelve hours, though the effect of extremely large doses might persist longer. We cannot say whether or not there is an appreciable cumulative effect when doses are given less frequently than every eight hours, but doses at four, six and eight hour intervals seem to have some cumulative effect. This was indicated by the fact that several times a second dose succeeded in eliminating s residual from the first dose. In every instance 100 mg. of the drug completely abolished all manifestations of the serum sickness within a period of two to three hours.

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[2] Dale, H. H., and Laidlaw, P. P.: The Physiological Action of B-Iminazolylethylamine, J. Physiol. **41:** 318, 1910.

[3] (*a*) Loew, E. R.; Kaiser, M. E., and Moore, V.: Synthetic Benzhydryl Alkamine Ethers Effective in Preventing Fatal Experimental Asthma in Guinea Pigs Exposed to Atomized Histamine, J. Pharmacol. & Exper. Therap. **83:** 120 (Feb.) 1945. (*b*) Loew, E R., and Kaiser, M. E.: Alleviation of Anaphylactic Shock in Guinea Pigs with Synthetic Benzhydryl Alkamine Ethers, Proc. Soc. Exper. Biol. & Med. **58:** 235 (March) 1945.

[4] Friedlaender, S., and Feinberg, S. M.: Histamine Antagonists: III. The Effect of Oral and Local Use of B Dimethylaminoethyl Benzhydryl Ether Hydrochloride on the Whealing Due to Histamine, Antigen-Antibody Reactions, and Other Whealing Mechanisms; Therapeutic Results in Allergic Manifestations, J. Allergy **17:** 129 (May) 1946.

[5] Todd, L. C.: Some Clinical Observations on the Use of Benadryl for the Symptomatic Relief of Allergic Conditions, Ann. Allergy **4:** 282 (July-Aug.) 1946.

[6] Appelbaum, E.; Abraham, A., and Sinton, W.: A Case of Serum Sickness Treated with Procaine Intravenously, J. A. M. A. **131:** 1274 (Aug. 17) 1946.

It is probable that future studies with the intravenous use of Benadryl will result in the development of improved technic for the control of the major crises in serotherapy.

It is interesting to note that the drugs recently investigated and found of value in the control of the histamine-like allergic reactions—theophylline ethylenediamine (aminophylline), Benadryl, procaine, pyribenzamine (N′pyridyl-N′benzyl-N-dimethylethylenediamine) and others—show certain structural similarities. All of them contain an aminoethyl or an ethylene diamine group[7] (fig. 3).

SUMMARY AND CONCLUSION

1. Ten cases of serum sickness have been treated successfully with Benadryl hydrochloride; 9 of the 10 cases were completely controlled, and the other was much improved.
2. Adequate therapy with this drug was found to consist of 50 to 100 mg. doses given at six to eight hour intervals and continued for the duration of the serum sickness.

Clinical Notes, Suggestions and New Instruments

METHEMOGLOBINEMIA IN AN INFANT AS A RESULT OF THE ADMINISTRATION OF BISMUTH SUBNITRATE

WILLIAM M. WALLACE, M.D.
Boston

Despite occasional reports[1] of fatalities or near fatalities from the administration of bismuth subnitrate the drug is still commonly prescribed in the treatment of diarrheal disease in infants as well as older children and adults. The statement is made in Useful Drugs[2] under the section on bismuth compounds that "the salt most frequently used is bismuth subnitrate, but since this sometimes produces poisonous effects, the subcarbonate is preferable." The reduction of nitrate to nitrite by the intestinal flora, the absorption of the latter and the subsequent development of methemoglobinemia is supposed to be a recognized danger but a seldom considered sequence. The following case report is considered worthy of note to emphasize the possibly lethal effects of bismuth subnitrate and to reemphasize the method of treatment which may often be an emergency life saving measure.

REPORT OF A CASE

An infant aged 5 weeks and weighing 8½ pounds (3,856 Gm.) was admitted to the medical service of the Children's Hospital with a chief complaint of "blueness" of four hours' duration. The infant's birth and neonatal progress had been uneventful except for short periods of intermittent diarrhea which lasted two to three days. For this difficulty numerous changes of formula had been prescribed. At the time of admission he had been on a formula composed of "Dryco" and water. On the day prior to admission, because of twenty-four hours of fussiness and diarrhea, bismuth subnitrate powder had been prescribed in half-teaspoon doses to be placed in each bottle of formula. Three such feedings were given during the afternoon and evening of the day prior to admission. Eighteen hours after the initial dose the parents noted that the infant's face had become blue and that this hue had rapidly spread over the whole body. This progression was said to have occurred in only a few minutes. At the same time his breathing had become extremely rapid and labored. Physical examination on admission showed that the temperature was 101 F., the pulse rate 184 per minute and the respiratory rate 60. Respiration was deep and typical of air hunger. The skin presented a deep slate-colored cyanosis which involved the entire surface of the body. The heart was observed to be slightly enlarged, and a moderate apical systolic murmur was heard. The remainder of the examination was not noteworthy.

The baby was immediately placed in a Burgess-type oxygen tent with oxygen at high concentration. This procedure diminished the dyspnea but caused no appreciable change in the cyanosis. Blood which was drawn for examination was chocolate colored. The hemoglobin (Sahli) was 10.8 Gm. per hundred cubic centimeters, and the erythrocyte count was 3.3 million per cubic millimeter. On the supposition that fresh hemoglobin would aid the infant, 100 cc. of washed, resuspended red blood cells were infused through a vein of the scalp. This, however, resulted in a decided increase in the cyanosis. While attempts were being made to prepare and administer methylene blue by vein, 50 mg. of methylene blue in 120 cc. of 5 per cent dextrose were given by mouth. Within fifteen minutes the cyanosis had totally disappeared and the infant was breathing normally. No intravenous methylene blue was needed. The initial oral dose was repeated at four hour intervals for three doses, but return of the cyanosis was not observed. The infant was discharged after forty-eight hours and when seen again six days later was thriving. The heart murmur heard on admission had disappeared.

Prior to treatment, blood was drawn into an oxalated tube and stored under oil in the refrigerator. Analysis of this blood[3] after eighteen hours showed 48 per cent methemoglobin. In stored shed blood there is a spontaneous decrease in methemoglobin. The rate of decrease is conditioned by the amount of methemoglobin-forming substances remaining in the blood. In this instance the blood at the time of withdrawal must have contained somewhat more methemoglobin than the analysis revealed. Culture of material from the infant's nose, throat and stool showed no organisms not normally present.

COMMENT

On admission the infant was observed to be critically ill, and a provisional diagnosis of congenital cardiac disease of the potentially cyanotic group was made. The mild cardiac enlargement and heart murmur made this diagnosis seem reasonable. After being placed in the oxygen tent the infant passed a black, watery stool. This, coupled with the chocolate color of the blood, led to the suspicion of methemoglobinemia due to nitrites derived from bismuth subnitrate. More detailed questioning of the parents brought forth the history of medication with a white powder which the dispensing pharmacist stated to be bismuth subnitrate. Because of the emphasis that has been placed on the role of methylene blue in forming methemoglobin to account for the antidotal action of this compound in cyanide poisoning[4] the value of such treatment was not at once realized in this instance. A transfusion of resuspended red cells was given in the hope of increasing the amount of functioning, circulating hemoglobin. The increase in the cyanosis subsequent to this transfusion led to a rapid reconsideration of the pathologic physiology of methemoglobinemia; it became apparent that the newly infused hemoglobin was rapidly converted to methemoglobin, thereby further intensifying the cyanosis. The institution of methylene blue therapy led to the previously noted excellent results.

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[7] This presence of a common group in these drugs was first called to our attention by Dr. Leo Dickison of the Department of Pharmacology at Vanderbilt University School of Medicine.

From the Infants' and Children's Hospitals.

[1] Bennecke: First Fatal Case of Bismuth Subnitrate Poisoning Reported in the Literature, München. med. Wchnschr. **53**: 945, 1906; cited by Beck, E. G.: Toxic Effects from Bismuth Subnitrate, J. A. M. A. **52**: 14 (Jan. 2) 1909. Boehme, A.: Nitrite Poisoning from the Internal Administration of Bismuth Subnitrate, Arch. f. exper. Path. u. Pharmakol. **57**: 441, 1907. Novak, J., and Gutig, C.: Nitrite Poisoning Because of Bismuth Subnitrate, Berl. klin. Wchnschr. **45**: 1764, 1908. Roe, H. E.: Methemoglobinemia Following the Administration of Bismuth Subnitrate, J. A. M. A. **101**: 352 (July 29) 1933. Miller, R. C.: Methemoglobinemia Occurring in a Case of Chronic Ulcerative Colitis, Proc. Staff Meet., Mayo Clin. **19**: 308 (June 14) 1944. Miller, G. E.: Bismuth Subnitrate Poisoning and Methemoglobinemia, Gastroenterology **4**: 430 (May) 1945.

[2] Useful Drugs, ed. 9, Chicago, American Medical Association, 1934.

[3] Analysis of the blood for methemoglobin was made by Dr. Clement Finch of the Peter Bent Brigham Hospital.

[4] Wendel, W. B.: Methylene Blue, Methemoglobin, and Cyanide Poisoning, J. Pharmacol. & Exper. Therap. **54**: 283 (July) 1935.

It has been shown that under certain circumstances[5] nitrates are reduced to nitrites by the intestinal flora. The absorption of the nitrite so formed results in the conversion by oxidation of the iron in the hemoglobin molecule from the ferrous to the ferric state with the formation of methemoglobin, a non-oxygen-carrying pigment. The kinetics of this reaction have been studied by Darling and Roughton.[6] These investigators have shown that, in addition to the inactivation of a fraction of the oxygen-carrying power of hemoglobin, further physiologic disadvantage occurs because of a decided shift to the left of the oxygen saturation curve of the remainder of the functioning hemoglobin. After a given dose of nitrite there is a spontaneous reconversion of methemoglobin to hemoglobin within eight to nine hours.[7] However, the critical period of anoxia which may lead to death in a few hours warrants the use of methylene blue to hasten the reconversion. Poisoning with nitrites, unlike the methemoglobinemia of so-called enterogenous cyanosis and aniline poisoning, results in a rapid course of events. Physiologically, this is analogous to the effects of rapid hemorrhage versus slow loss of blood. The former is the more likely to end in a lethal occurrence. Ascorbic acid has recently been advocated[8] as superior to methylene blue in the treatment of methemoglobinemia. The effect of ascorbic acid in reversing the equilibrium between methemoglobin and oxyhemoglobin is slow, requiring ten to twelve hours at least, while methylene blue exerts its action in a matter of minutes.[9] In acute poisoning with nitrites death may occur before the antidotal action of ascorbic acid can take place. Ascorbic acid is of value, however, in the treatment of poisoning by such substances as aniline, in which the methemoglobin is continually formed from a given dose over a period of days.

Under certain conditions, as Warburg[10] has shown, methylene blue may form methemoglobin. For this reason its use has been recommended in the treatment of cyanide poisoning by Wendel,[4] and a general belief has become current that its use is contraindicated in methemoglobinemia. Wendel has investigated, in vivo, the clinical action of methylene blue in methemoglobinemia when the drug is used in low concentrations and has thoroughly validated its usefulness. He has advanced the view that the tissues of the body, other than the erythrocytes, rapidly convert methylene blue to the leuko form in which it is a capable reducing agent; the latter form then returns to the erythrocytes to reduce the methemoglobin to hemoglobin.

The toxic effects of methylene blue have been reviewed by Wendel.[7] The effective and safe dosage of the drug is 1 to 2 mg. per kilogram of body weight when given intravenously. The oral dosage is estimated to be approximately ten times the intravenous dose. At such dosage levels toxic effects are not to be expected. The required dose should be given slowly and diluted with 5 per cent dextrose or with isotonic solution of sodium chloride. Paravenous injection is to be avoided. For intravenous use the drug is marketed in a 1 per cent sterile solution in ampules. When the drug is given intravenously the cyanosis generally disappears in fifteen to thirty minutes;[11] with oral dosage the improvement may be delayed several hours. The rapid oral action in the reported case may possibly be attributed to the increased permeability of the gastrointestinal tract associated with diarrhea, in addition to the known rapid turnover of body fluids in the infant. In acute poisoning due to nitrite the wisest course would seem to be the immediate oral administration of methylene blue at a dosage of 10 to 20 mg. per kilogram of body weight to cover the period of obtaining, preparing and administering the drug by the intravenous route. The latter procedure may be time-consuming and not immediately available. Death from anoxia may quickly follow the onset of the cyanosis.

SUMMARY

1. A case of acute methemoglobinemia in a 5 week old infant given bismuth subnitrate for diarrhea is reported.

2. The danger that the administration of bismuth subnitrate may cause methemoglobinemia is stressed.

3. The use and antidotal action of methylene blue in methemoglobinemia is discussed.

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[5] Zobell, C. F., and Myer, K. F.: Factors Influencing the Reduction of Nitrates by Bacteria in Semi-Solid Media, J. Bact. **24:** 273 (Oct.) 1932; Reduction of Nitrates and Nitrites by Representatives of the Brucella Group, Proc. Soc. Exper. Biol. & Med. **29:** 116 (Nov.) 1931. van den Bergh, A. A. H.: Enterogenous Cyanosis, Deutsches Arch. f. klin. Med. **83:** 86, 1905.

[6] Darling, R. C., and Roughton, F. J. W.: The Effects of Methemoglobin, Am. J. Physiol. **137:** 56, 1942.

[7] Wendel, W. B.: The Control of Methemoglobinemia with Methylene Blue, J. Clin. Investigation **18:** 179 (March) 1939.

[8] Carnrick, M.; Polis, B. D., and Klein, T.: Methemoglobinemia: Treatment with Ascorbic Acid, Arch. Int. Med. **78:** 296 (Sept.) 1946.

[9] Shortly after the admission of the infant whose case is reported herein, a member of the technical staff of the pathology department of the hospital swallowed an unknown amount of sodium nitrite, mistaking it for sodium bicarbonate. Approximately two hours later he became nauseated, felt dizzy and vomited, and intense cyanosis developed. He was unable to move about without syncope. Seventy-five milligrams of methylene blue was given intravenously in a period of five minutes. Before the end of the injection he noted the cessation of a sensation of "drumming" in the ears and relief from a sensation of pressure within the chest. Twenty minutes later he was free from all signs of cyanosis and was able to walk about freely without feeling faint.

[10] Warburg, O.; Kubowitz, F., and Christian, W.: On the Catalytic Action of Methylene Blue in Living Cells, Biochem. Ztschr. **227:** 245, 1930.

[11] Warburg, Kubowitz and Christian.[9] Wendel.[7]

Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.

Austin Smith, M.D., *Secretary.*

CHORIONIC GONADOTROPIN (See New and Nonofficial Remedies, 1946, p. 470).

The following dosage forms have been accepted:

Lakeside Laboratories, Milwaukee

Choriogonin *(Powder).*

Choriogonin 100 International Units and 500 International Units: 1.5 cc. vials. Vials containing a powdered preparation of chorionic gonadotropin with urea and sodium phosphate which when diluted with the accompanying 1.5 cc. of sterile distilled water, containing 0.5 per cent phenol, provide a solution having a potency of 100 or 500 international units per cubic centimeter.

Choriogonin 1,000 International Units, 5,000 International Units and 10,000 International Units: 10 cc. vials. Vials containing a powdered preparation of chorionic gonadotropin with urea and sodium phosphate which when diluted with the accompanying 10 cc. of sterile distilled water, containing 0.5 per cent phenol, provide a solution having a potency of 1,000 5,000 or 10,000 international units per cubic centimeter.

U. S. trademark 419,102.

CONTRACEPTIVE JELLIES AND CREAMS (See New and Nonofficial Remedies, 1946, p. 360).

The following article has been accepted:

Julius Schmid, Inc., New York

Ramses Vaginal Jelly: 92 Gm. collapsible tubes. A water soluble jelly formed from carboxymethylcellulose and glycerin having a p_H of 4, prepared from the formula:

Dodecaethylene glycol monolaurate	5.00%
Boric acid	1.00
Alcohol	5.00
Carboxymethylcellulose	2.50
Glycerin	9.00
Butyl parahydroxybenzoate	0.02
Perfume	0.01
Water to make	100.00

Packaged with a Ramses Vaginal Applicator or in refill packages containing a tube of jelly only.

U. S. trademark 306,696.

Ramses Vaginal Applicator: A transparent plastic tube threaded at the blunt intravaginal end to screw onto the tubes of Ramses Jelly to permit filling by compression. A plastic cylinder fitted inside the tube permits the operator to expel the jelly. The full capacity is 5 cc., the recommended dose.

U. S. patents 1,918,706 and 2,077,176.

PENICILLIN TROCHES (See The Journal, March 22, p. 851).

The following dosage form has been accepted:

Bristol Laboratories, Inc., New York

Troches Penicillin Calcium: 1,000 units.

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SATURDAY, APRIL 26, 1947

THE TEACHING OF NUTRITION—I

Most physicians are now well aware of the importance of nutrition and believe it should be given greater attention in the teaching of medicine. Since the curriculum is full, however, the proposal does not demand establishment of a new division or the segregation of nutrition in a single department. While the fundamentals of medicine are being taught by the physiologist and the biochemist, the practical application of the science of nutrition may be integrated with the teaching conducted in the clinical branches. Consideration of nutrition is just as important in surgery[1] as in medicine and pediatrics; in obstetrics[2] its importance transcends many other factors.

Pellagra, sprue, beriberi, scurvy and the other deficiency diseases are probably receiving adequate attention, but these disorders are of minor importance compared with the borderline states of nutritive failure. Inadequate nutrition is related to vague ill health and retardation of recovery from many diseases. Recognition of such inadequacies depends not on laboratory technics but rather on the clinical acumen of the physician. Most clinicians have seen the mental depression, lack of initiative and loss of efficiency that accompany nutritive deficiency and the "neurasthenia" in patients who a year later developed frank pellagra.[3] Nutritional neuropathies have been described recently in internees and prisoners of war who lived on grossly deficient diets.[4] Nutrition definitely modifies the course of such diverse diseases as typhoid, peptic ulcer and cirrhosis of the liver.

The student must be taught to recognize these conditions. He must learn to keep in mind the nutritive status when he looks at the patient, at the eyes, the tongue, the gums, the skin and the bony contour. He must remember the importance of nutrition as he tests the reflexes and evaluates nervous stability. He must recognize the heavy draft that infectious and other diseases make on the patient's nutritional resources. He must realize that he can frequently hasten recovery by giving thought to the state of nutrition. If he is interested in the comfort and happiness of those who look to him for advice he must learn that the words adequate and optimum as applied to diet are not synonymous. By giving appropriate advice he can do his part in contributing to the happiness of the patient and ultimately to the improvement of the race.[5]

The Council on Foods and Nutrition emphasizes the importance of a knowledge of nutrition in scientific medicine. The problem, as the Council sees it, is to induce teachers of medicine to weave a heavier design of this relatively new subject into the already tight fabric of daily teaching.

ACQUIRED PENICILLIN RESISTANCE OF TREPONEMA PALLIDUM

The question as to whether or not Treponema pallidum may develop an acquired resistance to penicillin is of clinical and epidemiologic interest. Kolmer and Rule[1] of the Philadelphia Research Institute of Cutaneous Medicine have produced experimental evidence against this acquired tolerance.

In their experiments rabbits were inoculated intratesticularly with the Nichols-Hough strain of T. pallidum. About five weeks later all inoculated rabbits showed acute syphilitic orchitis with strongly positive dark field findings. The minimum curative dose of a commercial penicillin, given in aqueous solution by three intramuscular injections for ten doses, was between 1,000 units per dose, a total dose of 10,000 units per kilogram, and 5,000 units per dose, or a total dose of 50,000 units per kilogram. Rabbits given less than 10,000 units (e. g. a total dose of 4,500 to 9,000 units per kilogram) showed a temporary clinical improvement with negative dark field findings in from seven to fourteen days. This was followed by a relapse with positive dark field findings.

At the end of three weeks a second group of rabbits was inoculated intratesticularly with testicular material from these relapsed animals. All developed acute syphilitic orchitis with positive dark field findings. These animals were then given a subcurative dose of penicillin. All of this group showed clinical improvement with negative dark field findings about seven days after treatment but relapsed clinically about two weeks later. A week later a third group of rabbits was inoculated intratesticularly with material from this second relapsed group. These animals were similarly treated with a subcurative dose of penicillin. The reinoculation was repeated through a fourth group.

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[1] Lund, Charles C., and Levenson, Stanley M.: Protein in Surgery, J. A. M. A. **128**: 95 (May 12) 1945.

[2] Ebbs, J. H.: Nutritive Requirements in Pregnancy and Lactation, J. A. M. A. **121**: 339 (Jan. 30) 1943.

[3] McLester, J. S.; Nutrition and Diet, ed. 4, Philadelphia, W. B. Saunders Company, 1934, p. 335.

[4] Clarke, C. A., and Sneddon, J. B.: Nutritional Neuropathy, in risoners of War and Internees from Hong Kong, Lancet **1**: 734 (May) 1946.

[5] Sherman, H. C.: The Expanding Opportunity of the Science of Nutrition, Nutrition Rev. **4**: 225 (Aug.) 1946.

[1] Kolmer, J. A., and Rule, Anna M.: Proc. Soc. Exper. Biol. & Med **63**: 240 (Nov.) 1946.

Material from the fourth relapsed group was inoculated into a large fifth group. The minimum curative dose of penicillin was redetermined on this group. Rabbits of this group given a total dose of between 10,000 and 50,000 units per kilogram became permanently negative. The total cure was confirmed by lymph node transfer. Within the limits of the experimental error the results were identical with therapeutic titrations on control rabbits inoculated with the original infectious material. From this Kolmer concludes that T. pallidum does not show evidence of an acquired resistance to penicillin after three consecutive passages through the testicles of rabbits treated with subcurative amounts of commercial penicillin.

This conclusion is in accord with previous conclusions by Tung and Frazer,[2] who found that cultures of T. pallidum did not develop evidence of increased resistance to penicillin after being subjected to fifteen passages through mediums containing substerilizing concentrations of this compound.

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[2] Tung, Tsun, and Frazer, C N.: Am. J. Syph, Gonor. & Ven. Dis. **30**: 205 (May) 1946.

PRIMITIVE FAT ORGANS.

Two theories prevail concerning the histogenesis of the fat cell. According to one, it is a cell set apart in early life for the purpose of producing fat, so-called primitive fat "organs" being found in various localities in the form of small groups of stellate or spindle cells richly permeated by capillary vessels. The other theory accounts for the origin of the fat cell on the basis of metaplasia of the fibroblast with accumulation of fat within its body. The fibroblast, when it fails to take on the specialized function of the fat cell, it is assumed, follows its natural inclination and develops into connective tissue. Probably both methods of cellular lipogenesis are effective. In certain pathologic conditions the primordial fat "organs" are increased in size because of hyperplasia of their cellular constituents; inversely, in many cachectic subjects the fat disappears from the cell and the cytoplasm is replaced by serous fluid in the epicardial and perirenal tissues, the cell reverting to the polygonal form of the embryonal unit —so-called serous atrophy of fat. Identical reversionary changes may be produced experimentally in fat tissues by prolonged starvation, but if the animal is given carbohydrate the fat is replaced in the cell body. In the bodies of marantic infants bright cherry-red primitive fat "organs" may sometimes be found in chains or trellis-like formations over such a wide distribution as to resemble a disseminated new growth, especially in intermuscular fascial planes, in the loose connective tissues around the larynx, the esophagus and the thyroid gland, behind the sternum, in the precordial area and around the kidneys. In other circumstances, notably in a wide variety of chronic overproductive inflammatory lesions attended by overgrowth of fibroblasts, the transformation may be observed of young connective tissue elements into cells indistinguishable from those of the primitive fat "organs."

In 1915 Pende[1] described what he believed to be a gland of internal secretion belonging to the endocrine system (glandula insularis cervicalis). He found it in children and in puppies as solid islands of cells which he assumed to be of epithelial nature. However, it is now generally accepted that the structures described by Pende are identical with primitive fat "organs."

The interscapular or hibernating gland of Merkle is a paired fat "organ" which extends over a considerable area in the region of the shoulders and the sides of the neck. It is constant in mammals, and in man it is probably the homologue of the hibernating gland of rodents. Shattock,[2] referring to the hibernating gland of the hedgehog, states that "during hibernation these reserves are used up and dwindle away, a residuum of connective tissue alone remaining, to be again replaced before the arrival of the next hibernating season." Others believe that the fat in these localities is not disturbed during hibernation or starvation. However true this may be, apparently sound opinion holds that the hibernating or interscapular gland is an organ primarily set apart for the storage of fat. The clinical significance of embryonal fat cells is further exemplified in a disease described by Whipple[3] that is characterized by gradual loss of weight and strength, by the presence of abundant neutral fat and fatty acids in the stools and by a variety of fugitive arthritis involving multiple joints. Anatomically, the intestinal villi were enlarged because of extensive deposits in the lymph spaces of neutral fats and fatty acids together with infiltration of the interglandular connective tissues by cells which are morphologically identical with embryonal fat cells. The submucous connective tissues and the mesenteric lymph nodes were similarly affected. Since the appearance of Whipple's paper 7 cases of this description have been reported.[4] Finally, Inglis[5] has described a tumor derived from the polygonal fat cells of the interscapular gland, and Symmers[6] has recorded a spindle and giant cell sarcoma arising presumably from the connective tissues of the intrathoracic primitive fat "organs."

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[1] Pende, N.: Ueber eine neue Drüse mit innerer Sekretion (Glandula insularis cervicalis), Arch. f. mikr. anat. **86** (1, Abt): 193, 1914.

[2] Shattock, S. G.: On Normal Tumor-like Formations in Man and the Lower Animals, Proc. Roy. Soc. Med. **2**: 207 (path. sec.) 1908 1909.

[3] Whipple, G. H.: A Hitherto Undescribed Disease Characterized Anatomically by Deposits of Fat and Fatty Acids in the Intestinal and Mesenteric Lymphatic Tissues, Bull. Johns Hopkins Hosp **18**: 382, 1907.

[4] Fitzgerald, P. J., and Kinney, T. D.: Intestinal Lipodystrophy (Whipple's Disease), Am. J. Path. **21**: 1069 (Nov.) 1945.

[5] Inglis, K.: So-Called Interscapular Gland and Tumors Arising Therein, J. Anat. **81**: 452 (July) 1927.

[6] Symmers, Douglas: Spindle and Giant Cell Sarcoma Arising from Unidentified Precordial Bodies, Arch. Path. **37**: 180 (March) 1944.

Current Comment

EOSINOPHILIC GRANULOMA OF BONE

In 1940 a granulomatous bone lesion was described by Otani and Ehrlich[1] and by Lichtenstein and Jaffe,[2] who named it eosinophilic granuloma of bone; the disease is now well established under that name. Recently three reports[3] of 10 new cases were published, bringing the number of reported cases to 63, most of them from this country. Consequently the granuloma should be considered in the diagnosis of bone diseases, especially those of localized nature occurring in the early decades of life. Briefly stated, this condition is a more or less self-limited osteolytic, granulomatous process of unknown but possibly infectious nature. In the early stages eosinophilic leukocytes dominate the cellular picture of the lesion; later vacuolated mononuclear cells—foam cells—are more characteristic; healing takes place by fibroblastic proliferation and regeneration of bone. The disease may occur in any part of the skeleton proximal to the wrists and ankles. The lesion, more frequently single than multiple, appears to extend from the marrow Usually the x-rays show a round, oval or irregular area of decreased density and 1 to 4 cm. in diameter. There may be some fever with leukocytosis and also local tenderness, pain and swelling of the soft tissues over the bone lesion. The natural course runs from a few months to a year or more. In single lesions the prognosis seems good even without treatment. Surgical excision, curettage and x-ray treatment have been effective. Most cases appear to heal under the x-rays. Concerning the diagnosis and treatment of eosinophilic granuloma of bone, Dundon, Williams and Laipply[3] say "Because the x-ray appearance of eosinophil granuloma may be indistinguishable from other inflammatory lesions, multiple myeloma or metastatic tumor, a biopsy is usually indicated. Thus, in most cases, the treatment of choice is probably either complete curettage or curettage followed by irradiation." A death from eosinophilic granuloma has not been recorded. Neither have any visceral lesions been described, a curious feature inviting close study. As indicated in the title of the comprehensive paper by Lichtenstein and Jaffe,[4] the mononuclear cells in the intermediate stages of the eosinophilic granuloma suggest a relationship to Letterer-Siwe disease and to the Schüller-Christian syndrome, each associated with a peculiar inflammatory histiocytosis, of which the granuloma may be the mildest clinical manifestation. Dundon, Williams and Laipply mention the occurrence of granuloma in a 17 year old girl; mild symptoms persisted for twenty-eight months and more after the onset, and there was mediastinal lymph node involvement in addition to a lesion of the sternum. Close study of such cases may throw light on the relation of eosinophilic granuloma of bone to extraskeletal and other forms of morphologically similar granulomatous processes.

UVEAL SARCOMAS

A study[1] of 263 cases of uveal sarcomas has revealed that males and females were about equally affected, the average age was approximately 52 years (with a range from 1½ years to 87 years), and people in the sixth decade were most prone to develop the disease. Martin-Jones found few etiologic factors. Although there were many cases in the series with a previous history of trauma, injury was a doubtful predisposing cause. A definite history of trauma was present in 6.4 per cent, an incidence of injury which is in agreement with 8.26 per cent for 1,439 cases of tumors of the eye and orbit observed at the Mayo Clinic. However, the British investigator feels that previous choroidal hemorrhages and old pigmentary changes in the fundus are only occasionally predisposing factors. Abnormal aggregations of pigment both in the choroid and in the iris may undergo malignant transformation. From a clinical diagnostic point of view the majority of the patients in this series presented themselves for examinations with vision reduced to perception of light or complete blindness. Fifty per cent had an increased intraocular tension. Retinal detachment without a "hole" was present in every case. The majority of the tumors were in the posterior part of the globe. Spindle cell tumors were the commonest variety, and epithelioid growths uncommon. Enucleation is, of course, the best treatment. In this series 27 per cent of the patients died within three years of operation, 36 per cent within five years and 56 per cent within ten years. The prognosis was bad in those cases in which melanogen was present in the urine and in patients in whom extraocular extension had taken place.

LOBECTOMY BRINGS LOW MORTALITY

Although the operation of lobectomy has been performed for many years, its value and the low operative mortality of the procedure may not be fully appreciated. Recently, Meade and his colleagues[1] discussed results of 236 lobectomies performed at the Kennedy General Hospital between November 1943 and May 1946. Lobectomy was performed for bronchiectasis, pulmonary cyst, chronic suppuration, bronchial adenoma, adenomatosis, tuberculosis, neurogenic sarcoma and actinomycosis. Bronchiectasis was by far the most common indication. Only 1 patient died. This report offers a splendid illustration of the effectiveness and especially of the safety of lobectomy as performed today.

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[1] Otani, Sadao, and Ehrlich, J C · Solitary Granuloma of Bone Simulating Primary Neoplasm, Am J Path **16**: 479 (July) 1940.

[2] Lichtenstein, Louis, and Jaffe, H L. Eosinophilic Granuloma of Bone, with Report of a Case, Am J. Path **16**: 595 (Sept) 1940

[3] Dundon, C C; Williams, H A, and Laipply, T. C Eosinophilic Granuloma of Bone, Radiology **47**: 433 (Nov.) 1946 Hamilton, J B, and associates · The Osseous Manifestations of Eosinophilic Granuloma, ibid., p. 445. Riley, P. · Eosinophilic Granuloma of Bone Report of a Case with Preoperative Roentgen Diagnosis, ibid, p 514.

[4] Lichenstein, Louis, and Jaffe, H L · Eosinophil Granuloma of Bone. A Condition Affecting One, Several or Many Bones but Apparently Limited to the Skeleton and Representing the Mildest Clinical Expression of the Peculiar Inflammatory Histiocytosis Also Underlying Letterer-Siwe Disease and Schüller Christian Disease, Arch Path. **37**: 99 (Feb.) 1944.

[1] Martin-Jones, J. D. · Uveal Sarcomata, Brit J. Ophth, Monograph Supplement XI, 1946

[1] Meade, Richard H. Jr.; Kay, Earle B, and Hughes, Felix A: A Report of 196 Lobectomies Performed at Kennedy General Hospital Chest Surgical Center from 1943 to 1946 with One Death, J. Thoracic Surg **16**: 16 (Feb) 1947.

ORGANIZATION SECTION

Medical Economics

THE TREND TOWARD LABOR HEALTH AND WELFARE PROGRAMS

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The health of trade union members has been a subject for union interest ever since 1893. True, extensive health insurance programs as are now being advocated are of comparatively recent development but only as far as they are considered issues related to collective bargaining. Provision for the financial protection of members against wage losses due to illness was among the earliest beneficial activities of trade unions. The barbers, who were organized in 1887, offered sick benefits to their membership in 1893. The tobacco workers and pattern makers provided such benefits as early as 1896. However, the whole history of union sickness benefits has been a troubled one. Many of the plans were begun on an inadequate financial basis. The following is a quotation from a bulletin recently released by the American Federation of Labor regarding the early health benefit plans: "Unions have sponsored their own benefit plans for decades. Often actuarially unsound, and overambitious in scope, many of these plans collapsed."[1] In 1933 twenty unions reported payments of sickness benefits. In 1943 there were eighteen such reports.

What, then, brought about the renewed interest in health and welfare programs, and when did they start their swing into the labor limelight?

The inclusion of health and welfare programs in labor contracts is a wartime development. During the period of the wage stabilization program efforts were made to secure "fringe benefits" in addition to proposed wage increases. The War Labor Board acted kindly toward proposals for sickness pay and approved complete health protection programs if the employer was agreeable; more often than not he was. This gave stimulus to the growth of the plans. Last year a Bureau of Labor Statistics bulletin gave a total of 600,000 as the number of workers covered by collective bargaining agreements which provide for some type of accident or sickness insurance. Just recently Boris Stern, chief of the Industrial Relations Branch of the Bureau of Labor Statistics, estimated that more than a million and a quarter wage earners are covered by agreements which have provisions of that kind.[2] The number is steadily increasing.

In the men's clothing industry 270,000 workers get health benefits. The textile industry covers 150,000; ladies' garment workers 200,000. The laundry, cleaning and dyeing industry covers 30,000. Walter Reuther has just announced a proposal for his 800,000 automobile workers. This is not just a wartime boom. It has real and permanent postwar potentialities.

The aims for inclusion of sick benefit programs within the framework of the collective bargaining agreement are threefold. The American Federation of Labor has announced the advantages of such programs as follows:

> 1. The individual union member is protected against the expenses of unforeseen accidents, sickness and loss of pay—the primary purpose of the program.
>
> 2. The union gains new prestige in the eyes of the old members, prospective members and rival union members. Thus, loyalty is secure from within, expansion made easier and raiding by dual unions made difficult.
>
> 3. The employer will find improved morale and increased cooperation among his employees. Labor turnover is decreased, thus stabilizing the labor force.

With respect to this last advantage, we cannot be certain that all employers will greet the union proposed plans with enthusiasm. In the past many employers sponsored mutual benefit associations as part of an "open shop" device to counteract unionism. Recent employer reaction has ranged from hearty enthusiasm to casual acceptance and, in the case of the coal mine operators, bitter opposition. It is difficult to distinguish between an employer's attitude toward sickness benefits as such and his attitude toward his whole collective bargaining situation. However, the general attitude toward the programs has not been hostile. It will be interesting to watch the response of the automobile manufacturers this spring to Walter Reuther's proposed social security and health benefit program.

The plans which are now in effect have certain general characteristics. First, with respect to benefits provided:

All the benefits are for nonoccupational disabilities. These are (1) weekly cash benefits during periods of illness or of disability caused by accidents, (2) hospital benefits, (3) surgical benefits, (4) maternity benefits and (5) benefits for accidental death, dismemberment and loss of eyesight and (6) several plans which now provide cash benefits for doctors' services.

Many of the plans include weekly disability benefits ranging from 50 to 60 per cent of the employee's regular earnings; other plans provide from $10.50 to $20 a week. Payments for hospital services range from $4 to $5 a day for thirty-one days. Maximum surgical benefits usually range from $100 to $175. A few plans allow specified payments for doctors' services up to a maximum of fifty visits for any one disability. Many programs provide service benefits through the Blue Cross Associated Hospital Service. The general practice has been, however, to provide only cash indemnity payments.

Eligibility requirements for benefits are usually that the worker be employed by a contributing employer and be in good standing in his union. A certain minimum period of employment is usually specified in those plans which are administered by insurance companies.

An important aspect of the programs is the manner in which they are administered. There are three main types of administration: (1) administration by a private insurance company, (2) administration solely by the union and (3) administration jointly by the union and the employer.

Even when the plan is underwritten by a private stock or mutual insurance company, the union and the employers frequently share in the responsibility of administration. A study made and published by the Industrial Relations Section of Princeton University stated that the health and welfare programs now in effect are predominantly union administered. Claims are generally filed through the union office. In some instances benefit payments are made directly by the insurance company. In other plans payments are made through the union office.

In those plans which are to be administered by the insurance company the benefits and coverage are determined through collective bargaining. The employer is then free to contract for such coverage with any company he chooses. It is quite common for the union to have a voice in the day to day administration. Some unions appoint shop committees to adjust individual complaints and grievances and see that the employer is paying the necessary premiums to the insurance company. Some of the unions which already have such plans are C. I. O. and A. F. L. textile workers, American Federation of Hosiery Workers, United Fur and Leather Workers, hotel and restaurant employees and street and electric railway employees.

The union administered benefit plans are financed entirely by the employer or employers who agree to pay a stipulated amount—usually a percentage of the payroll to a benefit fund

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From the Bureau of Medical Economic Research.

Excerpts from an address before the Annual County Secretaries and Public Relations Conference, Michigan State Medical Society, Detroit, Feb. 2, 1947.

[1] American Federation of Labor; Health Benefit Plans by Collective Bargaining, Collective Bargaining Series No. 1, May 25, 1946.

[2] Stern, Boris: Horizons in Industrial Health and Welfare, J. A. M. A. **132**:760 (Nov. 30) 1946.

established within the union. The International Ladies' Garment Workers Union, the New York City Laundry Workers and the United Hatters, Cap and Millinery Workers all have such plans.

Jointly administered plans are not quite so common. Examples are the Amalgamated Clothing Workers and the United Retail, Wholesale and Department Store Employees. The Amalgamated as far back as 1926 had arrangements whereby union members could receive careful medical examination and advice on health matters.

The great majority of the plans are financed entirely by the employers. The usual method is for the employer to pay a certain percentage of his pay roll. The most elaborate plans are financed by a "tax" or "royalty" on the employer's pay roll or sales revenue, with the union or a joint board of union-employer representatives possessing control over administration of the funds accumulated. Also widely employed is the directly negotiated insurance type plan which lends itself well to contracts covering a small number of employees. Usually the plan requires the employer to secure specific benefits stipulated in the agreement through insurance companies approved by the union, with the employer bearing some or all of the cost. In such cases a fixed pay roll tax is uncommon. Once the specific benefits have been written into the agreement and the insurance company is selected, the administration is no problem.

In bargaining for the pay roll percentage contribution method of financing the benefits, the question of the employer's ability to pay often arises. The unions claim that the fixed pay roll tax is advantageous as a method of employer financing since the costs are more likely to remain constant under this method than they are when the employer selects his own policy and administers the policy stipulated in the labor agreement. The employer who contributes a percentage of his pay roll would not be directly affected by increases in insurance company rates. This advantage, of course, presupposes a constant pay roll—which may or may not be the case.

In the United Mine Workers' Health Fund the agreement provides for a 1.5 per cent pay roll tax which is to be put into one special health fund. Out of this fund will be made payments for illness and disability, the nature of which has not yet been determined. It is not an insurance plan such as has been outlined. In fact, there is no present agreement as to just how any of the money which is to be accumulated in this fund will be distributed. Here is an example of union administration without provision for a private insurance company to underwrite the plan.

There are many problems which must still be faced in the development of union health and welfare programs. There are many types of programs in effect and many new kinds which are being advocated. A single ideal program cannot be evolved to meet equally the needs of different employee groups. Insurance agents have warned the unions that the plans must have a sound actuarial basis or that they will soon disintegrate because of their own inherent weaknesses. Occupation, age and sex of the group must be considered in developing the plan, and problems of administration should be carefully considered.

As far as the relation of the plans to public health insurance is concerned, it is felt that the unions have, at least temporarily, given up the idea of the government providing them with sickness insurance. Walter Reuther has said "There is no evidence to encourage the belief that we may look to Congress for relief. In the immediate future, security will be won for our people only to the extent that the union succeeds in obtaining such security through collective bargaining."[3] The aims of practical "here and now" unionism are being put into effect without waiting for the government to launch any cumbersome compulsory sickness insurance program. Union leaders are fast realizing the practicality of smaller scale plans, geared to their own particular needs, and administered for their own particular interests.

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Council on Medical Service and the Council on Industrial Health: Report to the San Francisco Session of the House of Delegates on National Bituminous Coal Mine Wage Agreement, J. A. M. A. **132:** 453 (Oct. 26) 1946.

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Industrial Relations Section, Princeton University: Group Health Insurance and Sickness Benefit Plans in Collective Bargaining, Princeton, N. J., 1945.

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Medical Legislation

STATE LEGISLATION

Colorado

Bill Passed.—H. 895, which passed the senate April 3, proposes to appoint the Colorado State Department of Public Health as the sole agency for carrying out the purpose of the **federal hospital construction act** and to require the governor to appoint a state advisory hospital council.

Delaware

Bill Enacted.—S. 225, which was approved April 5, provides for the establishment of a state **health and welfare clinic** and health center chiefly for children.

Kansas

Bill Passed.—H. 102, which passed the senate April 4, proposes to require all persons applying for a **marriage license** to present a certificate signed by a physician legally qualified under the laws of the state of Kansas or of the state in which he is practicing that the applicant is not infected with syphilis in such a stage as to make it communicable to a marital partner.

Bills Enacted.—H. 67, which was approved April 8, provides for the licensing and **regulating of hospitals** within the state. H. 399, which was approved April 3, is a **hospital survey and construction act** requiring a survey of existing hospital facilities and the preparation of a program for the construction of additional needed facilities. The law also provides for the appointment of an advisory hospital council and authorizes the application for and receipt of federal funds to assist in the survey and construction activities of the state.

Minnesota

Bill Passed.—H. 882, which passed the senate April 9, proposes to prohibit **hospital employees** of a charitable hospital from encouraging, participating in or causing any strike or work stoppage against or directly involving such charitable hospital. A senate floor amendment of April 7 proposes that this restriction should apply also to all state, university, county and municipal hospitals.

New York

Bills Enacted.—S. 740, which has become chapter 422 of the Laws of 1947, amends the revocation provisions of the **medical practice act** by providing that nothing shall prohibit physicians from practicing medicine as partners nor in groups nor from pooling fees and monies received either by the partnerships or groups or by the individual members thereof for professional services furnished by any individual physician, member or employee of such partnership or group, nor shall the physicians constituting the partnerships or groups be prohibited from sharing, dividing or apportioning the fees and monies received by them or by the partnership or group in accordance with a partnership or other agreement. S. 741, which has become chapter 721 of the Laws of 1947, amends the section of the **medical practice act** relating to exemptions by providing that the terms of the act shall not prevent a corporation organized under article nine of the insurance law from employing duly licensed physicians or from entering into contracts with duly licensed physicians or with partnerships or groups of duly licensed physicians to practice medicine on its behalf for persons insured under its contracts or policies.

South Carolina

Bill Passed.—S. 254, which passed the house April 10, proposes to authorize **osteopathic physicians** licensed in the state to certify birth and death certificates in the same manner as is now prescribed by law for other physicians.

Texas

Bill Passed.—H. 217, which passed the house April 9, proposes, among other things, that any physician duly licensed under the laws of Texas to practice medicine who, when an **autopsy** is ordered by a justice of the peace, performs the autopsy in good faith in the belief that the order of the autopsy is a valid order, shall not be held liable for damages in the event it should be determined that the order of autopsy made by the justice of the peace was for any reason invalid.

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[3] Reuther, Walter: Letter sent to local union presidents of United Automobile Workers—C. I. O.: Announcement of U. A. W.-C. I. O. Social Security Insurance Program, Nov. 15, 1946.

Coming Medical Meetings

American Medical Association, Atlantic City, June 9-13 Dr George F. Lull, 535 N Dearborn St, Chicago 10, Secretary

Aero Medical Association of the United States, Atlantic City, June 4-6. Dr. David S Brachman, 1016 Dime Bldg, Detroit 26, Secretary

American Association for Thoracic Surgery, St. Louis, May 28-30. Dr. Richard H. Meade Jr, 55 E Washington St, Chicago 2, Secretary.

American Association of Genito-Urinary Surgeons, Absecon, N J, June 4-6 Dr. Charles C Higgins, 2020 E 93d St, Cleveland 6, Secretary

American Association of Industrial Physicians and Surgeons, Buffalo, N Y, Statler Hotel, April 26-May 4 Dr. Frederick W Slobe, 28 E Jackson Blvd, Chicago 4, Secretary

American Association of Pathologists and Bacteriologists, Chicago, May 16-17. Dr Howard T. Karsner, 2085 Adelbert Road, Cleveland 6, Secretary

American Association of Plastic Surgeons, Nashville, Tenn, May 5-6 and Memphis, Tenn, May 7-8 Dr Frederick A Figi, 102 Second Ave S W, Rochester, Minn, Secretary

American Association of the History of Medicine, Cleveland, May 25-26 Dr Howard Dittrick, 2020 E 93d St, Cleveland 6, Secretary.

American Association on Mental Deficiency, St Paul, Minn, May 28-31. Dr Neil A Dayton, Box 51, Mansfield Depot, Conn, Secretary

American College of Allergists, Atlantic City, Hotel Senator, June 6-8 Dr Fred W Wittich, 401 LaSalle Medical Bldg, Minneapolis 2, Secretary

American College of Chest Physicians Atlantic City, June 5-8 Mr Murray Kornfeld 500 N Dearborn St, Chicago 10, Executive Secretary

American College of Physicians, Chicago April 28-May 2. Mr. E R Loveland, 4200 Pine St, Philadelphia 4, Secretary

American College of Radiology, Atlantic City, June 7-8 Mr Mac F. Cahal, 20 N Wacker Drive, Chicago 6 Executive Secretary

American Dermatological Association, Murray Bay, Quebec Can, June 1-5. Dr Harry R Foerster, 208 E Wisconsin Ave, Milwaukee, Wis, Secretary

American Federation for Clinical Research, Chicago, Hotel Sherman, April 28 Dr Richard H Lyons, University Hospital, Ann Arbor, Mich, Secretary

American Geriatrics Society, Atlantic City, Hotel Brighton, June 5-7. Dr Malford W. Thewlis, 25 Mechanic St, Wakefield, R. I., Secretary

American Heart Association, Atlantic City, Hotel President, June 6-7. Dr. Howard B Sprague, 50 W. 50th St, New York, Secretary

American Medical Women's Association, Atlantic City, June 7-8 Dr. Helen F. Schrack, 216 N Fifth St, Camden, N J, Secretary.

American Neisserian Medical Society, Atlantic City, Marlborough Blenheim Hotel, June 8 Dr William L Fleming, 750 Harrison Ave, Boston, Secretary

American Neurological Association, Atlantic City, Ambassador Hotel, June 16-18 Dr Walter O. Klingman, 195 Ft. Washington Ave, New York 32, Secretary

American Ophthalmological Society, Hot Springs, Va, June 5-7 Dr. Walter S Atkinson, 129 Clinton St, Watertown, N. Y, Secretary.

American Pediatric Society Stockbridge, Mass, May 13-15. Dr. Henry G Poncher, 1819 W Polk St, Chicago 12, Secretary.

American Physiological Society, Chicago, May 18-22. Dr. Maurice Visscher, University of Minnesota, Minneapolis, Secretary.

American Proctologic Society, Atlantic City, June 7-8 Dr. Harry E. Bacon, 2031 Locust St, Philadelphia 3, Secretary.

American Psychiatric Association, New York, Hotel Pennsylvania, May 19-23. Dr. Leo H Bartemeier, General Motors Bldg, Detroit, Secretary.

American Radium Society, Atlantic City, June 8 Dr Hugh F. Hare, 605 Commonwealth Ave, Boston 15, Secretary.

American Society for Clinical Investigation, Atlantic City, Chalfonte Haddon Hall, May 5 Dr Eugene A Stead Jr, Grady Hospital Atlanta 3, Georgia, Secretary.

American Society for Experimental Pathology, Chicago, May 19-23 Dr. Frieda S Robscheit Robbins, 260 Crittenden Blvd, Rochester, N. Y, Secretary

American Society for Pharmacology and Experimental Therapeutics, Chicago, May 18-22 Dr Harvey B Haag, Medical College of Virginia, Richmond 19, Va, Secretary

American Society for Research in Psychosomatic Problems, Atlantic City, May 3-4 Dr Edwin G Zabriskie, 714 Madison Ave, New York 21, Secretary.

American Society for the Study of Sterility, Atlantic City, Hotel Shand, June 7-8 Dr John O Haman, 490 Post St, San Francisco 2, Secretary.

American Society of Biological Chemists, Chicago, May 18-22 Dr. Otto A. Bessey, Public Health Research Institute, New York 9, Secretary.

American Society of Clinical Pathologists, Atlantic City, June 4-8 Dr. Alfred S Giordano, 531 N Main St, South Bend, Ind, Secretary

American Society of Electroencephalography, Atlantic City, Marlborough Blenheim Hotel, June 13-14 Dr. Robert S Schwab, Massachusetts General Hospital, Boston 14, Secretary

American Therapeutic Society, Atlantic City, Chalfonte Hotel, June 6-7. Dr. Oscar B Hunter, 1835 I St, N W., Washington 6, D C, Secretary.

Arizona State Medical Association, Tucson, May 7-10. Dr. Frank J Milloy, 112 N. Central Ave, Phoenix, Secretary.

Association for the Study of Internal Secretions, Atlantic City, June 6-7. Dr Henry H. Turner, 1200 N Walker St, Oklahoma City 3, Secretary.

Association of American Physicians, Atlantic City, May 6-7. Dr. Joseph T. Wearn, Lakeside Hospital, Cleveland 6, Secretary.

California Medical Association, Los Angeles, Hotel Biltmore, April 30-May 3 Dr. L Henry Garland, 450 Sutter St, San Francisco 8, Secretary.

Connecticut State Medical Society, New Haven, April 28-30 Dr. Creighton Barker, 258 Church St, New Haven 10, Secretary.

Federation of American Societies for Experimental Biology, Chicago, May 18-22 Dr William H. Chambers, 1300 York Ave, New York 21, Secretary.

Hawaii Territorial Medical Association, Lihue, Kauai, May 1-4 Dr. Harry L. Arnold Jr., 510 S Beretania St, Honolulu 53, Secretary.

Idaho State Medical Association, Sun Valley, June 16-19 Dr. William B Handford, Caldwell, Secretary

Illinois State Medical Society, Chicago, Palmer House, May 12-14 Dr. Harold M Camp, 224 S. Main St, Monmouth, Secretary.

Kansas Medical Society, Topeka May 12-15 Dr John M Porter, 512 New England Bldg, Topeka, Secretary.

Louisiana-Mississippi Ophthalmological and Otolaryngological Society, Biloxi, Miss, Buena Vista Hotel, May 5 Dr Edley H Jones, 1301 Washington St, Vicksburg, Miss, Secretary

Louisiana State Medical Society, New Orleans, May 12-14 Dr P. T. Talbot, 1430 Tulane Ave, New Orleans 13, Secretary.

Massachusetts Medical Society, Boston, Hotel Statler, May 20-22 Mr. Robert St B Boyd, 8 Fenway, Boston 15, Executive Secretary

Medical Library Association, Cleveland, Wade Park Manor, May 27-29 Miss Heath Babcock New York State Medical Library, Albany 1, New York, Secretary

Mississippi State Medical Association, Biloxi, May 6-8 Dr. T. M. Dye, Box 295, Clarksdale, Secretary.

National Gastroenterological Association, Atlantic City, June 4-6 Dr. G. Randolph Manning, Room 319, 1819 Broadway, New York, Secretary.

National Tuberculosis Association, San Francisco, June 16-19 Dr F. D Hopkins, 1790 Broadway, New York 19, Executive Secretary

Nebraska State Medical Association, Omaha, April 28-May 1. Dr R. B Adams, 416 Federal Securities Bldg., Lincoln 8, Secretary.

New Mexico Medical Society, Albuquerque, April 30-May 3 Dr. H. L. January, 221 West Central Ave, Albuquerque, Secretary

New Hampshire Medical Society, Portsmouth, Hotel Wentworth, June 19-20 Dr. Carleton R Metcalf, 5 South State Street, Concord, Secretary.

New York, Medical Society of the State of, Buffalo, May 5-9 Dr. Walter P. Anderton, 292 Madison Avenue, New York 19, Secretary.

North Carolina, Medical Society of the State of, Virginia Beach, Va, Cavalier Hotel, May 12-14. Dr. Roscoe D McMillan, P. O. Box 232, Red Springs, Secretary.

North Dakota State Medical Association, Fargo, May 25-27. Dr. L. W. Larson, 221 Fifth St, Bismarck, Secretary.

Ohio State Medical Association, Cleveland, May 6-8 Mr Charles S. Nelson, 79 E State St, Columbus 15, Executive Secretary

Oklahoma State Medical Association, Tulsa, Mayo Hotel, May 14-16. Mr R H. Graham, 210 Plaza Court Bldg, Oklahoma City, Executive Secretary.

Rhode Island Medical Society, Providence, May 14-15. Dr. Morgan Cutts, 106 Francis St, Providence 3, Secretary.

Society of American Bacteriologists, Philadelphia, May 13-16 Dr. Leland W Parr, 1335 H St N W, Washington 5, D. C., Secretary.

South Dakota State Medical Association, Rapid City, May 31-June 3. Dr. Roland G. Mayer, 22½ S Main St, Aberdeen, Secretary.

Texas, State Medical Association of, Dallas, Adolphus Hotel, May 5-8 Dr Holman Taylor, 1404 W. El Paso St, Fort Worth 3, Secretary.

United States-Mexico Border Public Health Association, San Diego, California, and Tijuana, Mexico, May 6-8 Dr James A. Grider Jr., 151 U. S Court House, El Paso, Texas, Secretary.

West Virginia Medical Association, Charleston, May 12-14 Mr. Charles Lively, 1031 Quarrier St, Charleston 24, Secretary.

GOVERNMENT SERVICES

ARMY

ARMY AWARDS AND COMMENDATIONS

Colonel John Hargreaves

Col. John Hargreaves, M. C., U. S. Army, has been awarded the Bronze Star Medal and the Legion of Merit for meritorious achievement in connection with military operations against the enemy on Okinawa from Aug. 24, 1945 to Jan. 9, 1946. As surgeon, Eighth Air Force, he exhibited superior professional competence and sound judgment in solving numerous complex problems incident to the organization and direction of an effective medical service for that command. He inaugurated and supervised efficient field sanitary measures which resulted in an extremely low disease incidence rate despite adverse living conditions. Through his ability, resourcefulness and devotion to duty Colonel Hargreaves made a vital contribution to the success of the mission of the Eighth Air Force.

Selected also for citation were his services from July 1942 to July 1945 as surgeon Air Service Command and surgeon Air Technical Service Command. He directed most successfully the Industrial Medical Program and specialized training and classification of medical officer personnel for the Air Forces. His professional knowledge, presight and energetic effort contributed immeasurably to the success of this difficult program. Dr. Hargreaves graduated from the University of Minnesota Medical School in 1924 and entered the military service in 1924.

Lieutenant Colonel Francis E. McDonough

The Legion of Merit has been awarded to Lieut. Col. Francis E. McDonough, M. C., A. U. S., of Boston, who was cited for exceptionally meritorious conduct in the performance of services from Jan. 1, 1944 to Aug. 15, 1945. As assistant air surgeon of the XX Bomber Command, he ably and loyally supported the surgeon in guarding and maintaining the health of Bomber Command personnel in India and China, a task complicated by dispersal of bases over thousands of miles of territory with varying climatic and endemic disease problems. Lieutenant Colonel McDonough spent long hours at unusually hard work finding solutions to these problems. As wing surgeon of the 58th Bombardment Wing he planned the entire medical program for more than 10,000 officers and enlisted men. On arrival at Tinian he designed and followed through on the construction of a consolidated wing dispensary. His thorough knowledge of internal medicine, his appreciation of the flight surgeon's problems, his cooperative attitude and his unusual fidelity have made his services during the entire period of outstanding value. Dr. McDonough graduated from the University of Wisconsin Medical School in 1934 and entered the military service July 7, 1942.

Colonel John M. Murray

The Legion of Merit has been awarded to Col. John M. Murray (then Lieut. Col.), M. C., A. U. S., of Boston, the citation reading "As chief of the psychiatric branch, Office of the Air Surgeon, during the period from January 1943 to October 1944, Colonel Murray displayed extraordinary foresight and professional skill in successfully completing the organization of psychiatric service of the Army Air Forces. His outstanding achievement in the establishment of schools for the indoctrination of medical officers in modern psychiatric methods reflects great credit on himself and on the military service." Dr. Murray graduated from the University of Pennsylvania Medical School in 1921 and entered the military service, Nov. 1, 1942.

Lieutenant Colonel Willard H. Waterous

The Legion of Merit has been awarded to Lieut. Col. Willard H. Waterous, M. C., A. U. S., of Manila, P. I., for his services as chief of the eye, ear, nose and throat service at General Hospital Number 2, Bataan, Philippine Islands, from December 1941 to May 1942. Despite the lack of medications and equipment, the citation recalls that he successfully performed many difficult operations, and throughout the final days of the defense of the Bataan Peninsula he continued to exercise his characteristic cheerfulness and optimistic demeanor to such a degree as to enhance the morale and well being of all with whom he came in contact. His conduct reflects credit on himself and on the military service.

Dr. Waterous has also been awarded the Bronze Star Medal and the Oakleaf Cluster in lieu of a second Bronze Star Medal. He was a prisoner of the Japanese from April 9, 1942 until released by the American forces Feb. 5, 1945. He graduated from Northwestern University Medical School in 1916 and entered the service Dec. 11, 1941. Since the war Dr. Waterous has conducted a medical clinic in Manila.

Lieutenant Colonel Howard D. Fabing

The Legion of Merit has been awarded to Lieut. Col. Howard D. Fabing (then Major), M. C., A. U. S., of Cincinnati, for exceptionally meritorious conduct in the performance of outstanding services as director of the School of Military Neuropsychiatry, 312th Station Hospital, European Theater of Operations, from Nov. 15, 1943 to June 30, 1944. The citation reads, in part, that Major Fabing supervised the various courses and did all the teaching of division medical officers at the school. Through his efforts the training film entitled "Combat Exhaustion" was produced. He standardized therapy for the treatment of front line neuropsychiatric casualties so that over half of the men suffering from this disturbance could be returned to duty within a week. Few of the men who attended the school had previous special training in psychiatry, but, employing the methodology taught by Major Fabing, they have been successful in treating psychiatric casualties in the combat zones. Dr. Fabing graduated from the University of Cincinnati College of Medicine in 1932 and entered the military service Dec. 30, 1942.

Major Nathan B. Friedman

The Army Commendation Ribbon has been awarded to Major Nathan B. Friedman (then captain), M. C., A. U. S., who served from July 31, 1942 to Jan. 23, 1946, and whose intelligence and application to duty says the citation, contributed in large measure to the professional success of the Army Institute of Pathology, especially as it concerned diseases of the genitourinary tract and of the endocrine glands. His studies and research have contributed materially to medical knowledge, particularly of tumors of the testis and to the pathology of injuries resulting from cold and immersion, all conditions of great importance to the military service. Dr. Friedman graduated from Cornell University Medical College, New York, in 1934 and entered the military service July 30, 1942.

Captain Morris A. Shapiro

The Silver Star and the Oak Leaf Cluster to the Silver Star were awarded to Capt. Morris Shapiro, M. C., A. U. S., of Schenectady, N. Y., for gallantry in action in the vicinity of El Guettar, Tunisia, March 23, 1943. One notes from the citation that, when a medical detachment had been immobilized by enemy artillery fire, Captain Shapiro organized a group of soldiers as litter bearers and throughout several hours of concentrated enemy artillery fire directed the successful evacuation of the wounded.

His gallantry in action in the vicinity of St. Cloud, Algeria, Nov. 9, 1942, is also cited. When all other attempts had failed, Captain Shapiro, at grave risk to his own life, crept forward beyond our front lines and evacuated a seriously wounded officer who was lying exposed to constant enemy shell and small arms fire. His exemplary conduct inspired the members of his battalion. Dr. Shapiro graduated from Albany Medical College in 1936 and entered the service Feb. 17, 1941.

VETERANS ADMINISTRATION

LONG RANGE MEDICAL RESEARCH PROGRAM

Out of a conference called in April 1946 by the National Research Council at the suggestion of the Surgeon General of the Army is developing a long range program of medical research to improve the medical care of veterans. Some of the nation's foremost medical groups, the Army, Navy and Public Health Service are cooperating in this program. The conference stressed that the wealth of medical information accumulated by the armed forces during the war could be the starting point for clinical studies from which would come the best possible medical care for veterans in the years ahead. Then a committee of the National Research Council (Dr. Edward D. Churchill, chairman) outlined a broad program, and the chairman, Division of Medical Sciences, National Research Council (Dr. Lewis H. Weed), appointed a committee to handle details of the research program. As it develops the program is expected to include (1) follow-up studies to further knowledge of the natural history of diseases and the results of treatment, (2) clinical studies to be carried out in VA hospitals and other institutions and (3) statistical studies on mortality, morbidity and continued disability. Physicians of the Army, Navy and Veterans Administration desiring to submit proposals for research projects may do so on special forms provided for those agencies. All others may obtain forms from the office of the committee on Veterans Medical Programs, 2101 Constitution Avenue, Washington, D. C. The following doctors are on the committee:

O. H. Perry Pepper, Philadelphia.
Francis J. Braceland Rochester, Minn.
Edward D. Churchill, Boston.
Winchell McK. Craig Minneapolis.
Michael E. DeBakey, New Orleans.
Louis I. Dublin, New York.
Morris Fishbein, Chicago.
Perrin H. Long, Baltimore.
William C. Menninger, Topeka, Kan.
J. Roscoe Miller, Chicago.
Hugh J. Morgan, Nashville, Tenn.
Cornelius P. Rhoads, New York.
Milton C. Winternitz, New Haven, Conn.

ADVANCED TRAINING FOR NURSES

The Veterans Administration is conducting advanced courses in neurologic, psychiatric and tuberculosis nursing. Classes in neurologic nursing held at the VA hospital in Hines, Ill., for three months ended March 16 placed special emphasis on the care of paraplegic patients. The course, to be repeated in April, carries credit points of ten semester hours from DePaul University, Chicago. The course in advanced psychiatric nursing at the University of Minnesota, Minneapolis, which ended April 3, carries fifteen college credit hours. This course is being repeated beginning March 29. Advanced instruction in the care of tuberculous patients is being held at the VA hospital in Oteen, N. C. Classes, which began February 1, will extend through May 1. A course to teach VA nurses methods of training neuropsychiatric attendants was held in January at Cushing General Hospital, Framingham, Mass. A total of 113 nurses so far have attended the courses.

NEW HOSPITAL MANAGERS

Dr. Frank C. Cassidy, manager of the Veterans Administration hospital, Outwood, Ky., was appointed manager of the VA hospital, Memphis, Tenn., effective March 23. Dr. Raymond E. Scott, San Antonio, Texas, will succeed Dr. Cassidy at Outwood, Ky. Dr. Scott, a veteran of both world wars, during World War II was chief of laboratory service at Fort Bliss, Texas, and later served in this country and in Africa and Europe as inspector and instructor in army hospitals and as commanding officer of the 11th Evacuation Hospital. Dr. Cassidy, a graduate of Tufts College Medical School, has been in service in veterans' hospitals for many years.

Dr. Paul C. Bruce, a veteran of both world wars, is now manager of the VA hospital, San Fernando, Calif., succeeding the late Dr. Samuel H. James. Dr. Bruce formerly was manager of the VA hospital at Legion, Texas.

PUBLIC HEALTH SERVICE

HEADQUARTERS MOVED TO SOCIAL SECURITY BUILDING

The headquarters for the U. S. Public Health Service, formerly 1901 Constitution Avenue N.W., is now in the Social Security Building, Fourth Street and Independence Avenue S.W., Washington, D. C. The Public Health Service units now located in the Social Security Building are those which are part of the Office of the Surgeon General. They are the division of commissioned officers, the dental division, the sanitary engineering division, the division of nursing and the division of public health methods. Also included are the office of international health relations, the budget and fiscal office and employment office and office of the chief clerk in the office of the executive assistant.

The Public Health Service building on Constitution Avenue will be occupied by the Atomic Energy Commission. The Public Health Service headquarters have been in this building since 1933 with the exception of a period during the war when it was occupied by the joint chiefs of staff and the combined chiefs of staff.

OFFICERS RELEASED FROM SERVICE

U. S. Public Health Service headquarters reports that the following medical officers have been terminated, inactivated or retired and directed to proceed to the city opposite their name:

Buck, Irvin F., assistant dental surgeon (R), Saint Cloud, Florida.

Casey, Harry E., engineer (R), Whitehouse, Ohio.

Hinson, Harry L., J. A. sanitarian (R), Charlotte, N. C.

Kaniss, Harry A., S. A. dental surgeon (R), Reading, Pa.

Lentz, Phyllis S., J. A. nurse officer (R), Mobridge, S. D.

HEALTH EDUCATION

Dr. Mayhew Derryberry, chief U. S. Public Health Service's office of health education, has been assigned temporarily as consultant in health education with the American National Red Cross. Dr. Derryberry, at the request of the Red Cross, will study its present health education services for the purpose of evaluating and coordinating programs now in operation and will advise with Dr. G. Foard McGinnes, Red Cross vice chairman for health services, on possible future health education activities of the national organization.

MEDICAL RESEARCH GRANTS

The National Advisory Health Council has recommended medical research grants amounting to more than $2,000,000. These grants must first be approved by the Surgeon General, Dr. Thomas Parran, and then are contingent on appropriations by Congress for the fiscal year which begins July 1. Of the 193 grants that supplement existing funds of universities and other research institutions, the largest, $105,800, was recommended for a study of syphilis by the Pan American Sanitary Bureau. Sums of $52,454 and $46,000 respectively were slated for the study of malaria by the University of Chicago and Christ Hospital, Cincinnati. Six other grants were above $30,000. An additional 55 grants were favorably considered but await modification of the amount or further study by the research grants division of the National Institute of Health before final action is taken. The research study involved in these grants covers a diverse number of subjects. The use of grants in aid in pursuing these studies implies no degree of federal control. The National Advisory Health Council which recommends research grants consists of fourteen members ten of whom are experts not otherwise employed by the government (THE JOURNAL, March 15, p. 790).

PHYSICIANS SEPARATED FROM SERVICE

ARMY MEDICAL CORPS OFFICERS RECOMMENDED FOR/OR RELIEVED FROM ACTIVE DUTY

California

Cole, Harold A.	Los Angeles
Copeland, Joseph	Visalia
Courtright, Lazarre J.	San Francisco
Fenmore, Milton S.	Ventura
Gordon, Kenneth W.	Los Angeles
Hill, Thomas P.	Lakeport
Kilroy, Dan O.	Sacramento
McCallum, Mac W.	Los Angeles
Markus, Ervin H.	San Francisco
Miller, Arthur W.	Riverside
Murray, Saunders	Los Angeles
Nies, Arthur J.	Orange
Porter, Robert T.	Menlo Park
Reynolds, Frederick G.	Los Angeles
Rhone, Thomas B.	Orange
Rossiter, Stanford B.	San Francisco
Schatz, Milton M.	Fresno
Schneider, Paul J.	Berkeley
Snyder, William H. Jr.	N. Hollywood
Specker, Lewis	Sacramento
Stewart, Charles M.	Los Angeles
Sweet, Ralph L.	San Francisco
Tompkins, Harold P.	Riverside
Trelstad, Bertram L.	Redding

Georgia

Williams, Virgil B.	Savannah

Illinois

Bennett, David	Chicago
Bower, Robert D.	Bement
Byers, James C. Jr.	Granite City
Fairall, Emmett R.	Hines
Garthe, John J.	Rockford
Horkavy, John	Chicago
Jansey, Felix	Riverside
Latta, Philip R.	Leland
Lusk, Frank B.	Chicago
Lynch, James I.	Peru
McCue, Daniel J.	Hines
McMillan, Foster L.	Chicago
Madden, Thomas J.	Aurora
Matheson, Earl W.	Neponset
Mercer, Thomas H.	Oak Park
Miller, Edwin M.	Chicago
Moses, Jerome J.	Chicago
Mullen, Joseph J.	Glencoe
Nelson, Tell	Chicago
Nicoll, Homer K.	Oak Park
Novack, Louis	Chicago
Peck, Hyman	Chicago
Purcell, James W.	Chicago
Quenzer, Fred A.	Maywood
Romano, John E.	Chicago
Temple, Claude O.	Chicago
Toomajan, Harry J.	Grayslake
Vander Laan, John E.	Chicago
Van Wien, Stefan	Chicago

New Jersey

Allen, Samuel L.	Roselle
Beakes, Charles H. C. III	Hackensack
Bekampis, Eugene H.	Merchantville
Belott, August V.	W. Orange
Copleman, Benjamin	Perth Amboy
Costa, George J.	Jersey City
DeFilippis, Ralph L.	Newark
Edwards, Charles H. Jr.	Marlton
Feinberg, Harry	Bayonne
LaPilusa, Salvatore J.	Bayonne
Levine, George I.	Jersey City
Levinson, Robert M.	Newark
Newman, Julius	So. Orange
Opper, Philip	Paterson
Piltz, George F.	Guttenberg
Pizzi, Mario V.	Orange
Revere, Seth D.	E. Orange
Roylance, Frank D. Jr.	Haworth
Smuda, Alphonse C.	Glendora
Somers, Willard H. Jr.	Englewood

New Jersey—Continued

Spirito, Michael W.	Elizabeth
Tickner, Louis	Maple Shade
Tomlins, Francis I.	Ridgewood
Voss, Jack L.	Bernardsville
Wallen, Benjamin B.	Wildwood

New York

Beckenstein, Harry A.	Brooklyn
Becker, Clarence R.	Troy
Bender, Benjamin	Brooklyn
Benschine, Frederick W.	Brooklyn
Birnbaum, David	New York
Cole, Robert F.	Ossining
Copsey, Harvey G.	Rochester
Costabile, Richard J.	New York
Craig, Stanley H.	Brooklyn
DeLuccia, Victor C.	New York
DiFabio, Anthony J.	Bronx
DuBovsky, Mortimer H.	New York
Ehrlich, David E.	Brooklyn
Faraci, Charles J.	New York
Fragala, Frank J.	White Plains
Friedlander, Ralph	New York
Friedman, George A.	New York
Gorson, Burton L.	Brooklyn
Kimaid, Emile	Buffalo
McEvoy, Joseph J.	Richmond Hill
McHugh, Hugh	New Rochelle
McKenna, Walter D.	Troy
McTamaney, Robert A.	Newburgh
Mellow, Joseph A.	Brooklyn
Messina, Philip V.	Brooklyn
Migden, Jacob I.	Brooklyn
Millemann, Raymond J.	Long Island
Miller, Saul	Long Island
Montemarano, Vincent T.	Brooklyn
Morton, Edward A.	New York
Moskowitz, Morris	Jackson Heights
Naidich, Harry	Freeport
Nannariello, Joseph J.	White Plains
Nightingale, Arthur B.	Brooklyn
Obletz, Benjamin E.	Kenmore
Osroff, Sidney	Brooklyn
Pashley, Warren J.	Cortland
Payne, Brittain F.	New York
Pier, Gardiner	New York
Podryski, Vladimir	Bronx
Porter, Charles H.	New York
Porter, Louis	Forest Hills, L. I.
Pushkin, Aaron	W. Hempstead
Re, Thomas V. B.	Brooklyn
Ripley, Herbert S. Jr.	New York
Ritter, Fred L.	Syracuse
Robbins, Jacques	Middle Village
Rose, Sigmund P.	Brooklyn
Santoro, George R.	W. Brighton, S. I.
Schultz, Elack	Bronx
Schwartz, Theodore B.	Forest Hills
Senne, Hubert S.	Glendale
Sieling, Walter H. Jr.	New York
Silvert, Meyer	Bronx
Skorneck, Alan B.	New York
Smith, David J.	Brooklyn
Smith, Marion R.	Utica
Smith, Steward H.	New York
Smoleroff, Jules W.	Mt. Vernon
Snell, Philip	New York
Sobel, Benno	Chenango Forks
Solovay, Julius	Brooklyn
Sommer, Murray M.	Bronx
Sposta, Dominick C.	New York
Steans, Maus W.	Schenectady
Steffenhagen, Dewey H.	Palatine Bridge
Steingold, Meyer	Bronx
Stepler, Thea	New York
Thygeson, Phillips	New York
Toomey, Joseph H.	W. New Brighton
Townsend, Ralph P.	Hartsdale
Treitman, Arnold	New York
Tytko, Michael J.	Schenectady

New York—Continued

Vandercar, Edward J.	Cohoes
Violyn, Roman R.	Amsterdam
Viti, Henry A.	Brooklyn
Weiner, Joshua H.	Brooklyn
Weinstein, Hyman W.	Brooklyn
Weiss, David	New York
Yager, Irvin I.	New York

North Carolina

Matthews, William C.	Davidson
Mills, Charles R.	Greensboro
Moretz, William H.	Hickory
Morgan, William C.	Salisbury
Nowell, James S.	Franklinton
O'Brien, William A. III	Leadsville

Texas

Beeler, George W.	Texas City
Bell, William E.	Houston
Belleggie, Philip A.	Houston
Bennack, George E.	Raymondville
Brandt, Otto Jr.	Brenham
Canales, Gregorio M.	Hebronville
Cleveland, Edwin M.	Dallas
Cole, Charles T.	Dallas
DeYoung, Richard	Houston
Kilman, Joseph R.	Belton
Lowe, Thomas E.	Houston
Magers, Morris E.	Gainesville
Melton, Walter T.	Houston
Nixon, Pat I. Jr.	San Antonio
Oxford, Marvin B.	San Antonio
Polka, James B.	San Antonio
Ponton, Arvel R. Jr.	Fort Worth
Rimmer, Raymond J.	Dallas
Simpson, Neill O.	Waco
Warren, William S.	Center
Wilson, Reginald	Liberty

Virginia

Bridgers, William H.	Newport News
Camp, James L. III	Franklin
Fuller, John B.	Chester

Washington

Pettibone, Deane M.	Renton
Smith, Lloyd H.	Wenatchee
Whitaker, Clifford W.	Tacoma
Zimmerman, Wayne W.	Seattle

West Virginia

McCullough, Edison W.	St. Marys
Sloan, Robert D.	Clarksburg
Unger, Abraham	Huntington

Wisconsin

Burdick, Harvey L.	Milton
Daniels, Farrington Jr.	Madison
Finn, Charles J.	Racine
Kreuter, George C.	Plymouth
Levin, Jules D.	Milwaukee
Pfeffer, Theodore J.	Racine
Pobanz, Samuel E.	Eau Claire
Rock, John W.	Milwaukee

Alaska

Weston, John I.	Seward

Hawaii

Chun, Lin T.	Honolulu

Puerto Rico

Morales, Luis A.	Naranjito
Palmer-Lopez, Arnaldo	San Juan
Rivera-Aponte, Pedro	Aguadilla
Torres-Oliver, Luis J.	San German
Vila, Jose L.	Yabucoa

Canal *Zone*

Springall, Arthur N.	Ancon

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest: such as relate to society activities, new hospitals, education and public health.)

CALIFORNIA

Personal.—Dr. James J. Short, for many years associated with the New York Post-Graduate Medical School and Hospital, Columbia University, New York, is now on the faculty of the College of Medical Evangelists, Loma Linda-Los Angeles, as associate professor of medicine.——Dr. Leo Eloesser, San Francisco, for two years in charge of the medical teaching program for China under UNRRA, discussed his experiences in China before the Institute of Pacific Relations and the California League of Women Voters March 4.——Dr. C. S. Ambrose, Visalia, has been appointed health officer of Tulare County to succeed Dr. Charles C. Hedges.——Dr. Donald L. Meamber, recently returned from service in the Pacific theater with the Navy, has been appointed health officer of the city of Yreka.——Dr. Jacob M. Furstman, for twenty-four years chief administrative head of the Monrovia Health District, Monrovia, became health director of the Santa Monica District Health Office March 1, succeeding Dr. William F. Reasner, Santa Monica, who is retiring from county service.——Dr. Herbert L. Herschensohn, Santa Monica, has been appointed medical director for the Douglas Aircraft Company. Dr. Herschensohn, a graduate of New York University Medical School, is the author of a series of articles entitled "The Germs We Live With," published by *Hygeia*, the Health Magazine.

Changes in Licensure.—The Board of Medical Examiners meeting March 10 made the following changes in the status of licentiates: Frederick S. Lorenz, Beverly Hills, was found guilty of unprofessional conduct and his license was revoked. The order of revocation was suspended for five years, and he was placed on probation with specified terms for the period. The license of Dr. David A. Stevens, Lynwood, was revoked when he was found guilty of unprofessional conduct. Dr. Leonard D. Wood, Laguna Beach, was found guilty of unprofessional conduct; his license was suspended for one year and he was placed on probation for ten years without narcotics. The license of Dr. Jean Andrews was restored and the doctor was placed on probation for five years without narcotics. License was restored to Dr. Wendell W. White, Los Angeles, and he was placed on probation for a period of five years with specified terms.

Kern County Hospital Investigation.—A legislative subcommittee which has been investigating the administration of the county operated Kern General Hospital in Bakersfield has recommended the enactment of a law requiring such institutions to obtain licenses from the state department of public health. The subcommittee, headed by C. Don Field of Los Angeles County, filed a fifty-three page report charging the Kern County Hospital with employing unlicensed doctors, one of whom was accused of selling donated blood and retaining the proceeds. Chairman Field said a copy of the report is being forwarded to the attorney general for "proper action." "It is incredible and amazing," the report said, "that a situation such as that disclosed by the evidence at the subcommittee's hearings could have existed in Kern County; that a score of unlicensed doctors would be hired as county employees, with the knowledge of the board of supervisors and of the medical director of the county hospital and be permitted to practice medicine in flagrant violation of our law." The report noted that the Kern County district attorney has filed charges against Dr. Alfred E. Rhoden, Bakersfield, accused of practicing without a California license, and that the state board of medical examiners has suspended for one year the license of Dr. Nicolai N. Rilcoff, Bakersfield, former medical director of the hospital, after which he will be placed on probation for a period of five years (Sacramento, Calif., *Bee*, March 31, 1947).

COLORADO

Personal.—Dr. Horace J. Dodge, former director of public health at Coeur d'Alene, Idaho, has joined the faculty of the University of Colorado School of Medicine as assistant professor of public health and preventive medicine. After receiving his M.D. at the University of Colorado and taking his internship and residency at Colorado General Hospital, Dr. Dodge obtained his master's degree in public health at the University of Michigan.

Grant to Study Tick Fever.—Lederle Laboratories has renewed its grant of $2,400 to the University of Colorado School of Medicine, Denver, for continuing research on Colorado tick fever. Under the direction of Dr. Lloyd J. Florio, professor of public health and laboratory diagnosis, studies will be continued to try to determine how the disease is spread, whether it exists in other areas and whether the virus can be isolated in nature.

Hospital Classroom for Children.—A playroom and classroom for children undergoing treatment at Colorado General Hospital, Denver, have been built and furnished at the hospital in memory of a former Denver teacher, Lillian Drayton Matheson. The rooms were made possible by remodeling the south porch of the children's ward in the hospital. Attractively decorated and furnished for children, the classroom contains necessary schoolroom equipment, and the board of education supplies the services of a full time teacher.

University Medical Center.—Dr. Ward A. Darley Jr., dean, University of Colorado School of Medicine, Denver, has been named director of the University of Colorado Medical Center. The medical center is the new name approved by the University Board of Regents for the schools of medicine and nursing, Colorado General Hospital and the Colorado Psychopathic Hospital located in Denver. Dr. Darley's new title as director of the medical center entails no new duties, as he has been serving as the director of the schools and hospitals with the title as dean of the school of medicine, a position he will continue to hold.

CONNECTICUT

Studies of State Society Objectives.—Dr. Courtney C. Bishop, New Haven, was elected chairman and Dr. Frank H. Couch, Cromwell, secretary of the Committee to Study the Organization and Objectives of the State Medical Society at its recent meeting in New Haven. The committee, authorized by the House of Delegates last December, is composed of one council member and one additional delegate from each of the eight component county medical associations. It will meet once a month.

DISTRICT OF COLUMBIA

Appointments at Georgetown University.—Dr. Norman Q. Brill, assistant chief, neuropsychiatry, Veterans Administration, has been named professor of neurology and director of the department. Dr. Brill, a graduate of New York University College of Medicine, New York City, has served on the staffs of Montefiore Hospital for Chronic Diseases and Mount Sinai, Morrisania City, New York Postgraduate and Sydenham hospitals in New York City. He was also an instructor in neurology at Columbia University College of Physicians and Surgeons, New York City. He received his M.D. degree from Johns Hopkins University School of Medicine, Baltimore, in 1928. Dr. Willi Baensch, newly named professor of roentgenology, recently came to this country from the University of Leipzig. At the last meeting of the International Congress of Radiology in Chicago in 1937 he was elected secretary general of the organization. Dr. Samuel P. Hicks, a graduate of the University of Pennsylvania School of Medicine, Philadelphia, has been named associate professor of pathology. During the war he was in charge of the laboratory, base hospital No. 17, in New Guinea and has been assistant pathologist and head of the department of pathology, Naval Medical School, Naval Medical Center, Bethesda, Md. Dr. Robert F. Dow, Bethesda, Md., has been appointed head of the department of physical therapy. Dr. Dow in 1939 became director of the physical and fever therapy department at St. Joseph's Hospital, Paterson, N. J. Following military service he was appointed chief of physical medicine and physician-in-chief, medical rehabilitation, of the Veterans Administration Hospital, Washington, D. C.

ILLINOIS

Personal.—Dr. P. Kenneth Gieser, eye specialist, Wheaton, left last month for Kano, Nigeria, West Africa, to take charge of an eye hospital. Dr. Gieser graduated from Northwestern University Medical School, Chicago, and had additional training at the Illinois Eye and Ear Infirmary in Chicago.

Moorehead Memorial Fund.—A committee to plan a suitable memorial to the late Frederick B. Moorehead, D.D.S., M.D., former dean of the College of Dentistry, University of Illinois, Chicago, has been created by the Alumni Association of the college. The alumni and friends of Dr. Moorehead in the medical and dental professions are asked to send their checks to Robert I. Humphrey, D.D.S., Treasurer, Moorehead Memorial Committee, 185 North Wabash Avenue, Chicago.

Construct Plant to Eliminate River Pollution.—A recovery plant to eliminate all pollution in the Illinois River caused by the discharge of residues at the American Distilling Company's Pekin plant is being constructed and is expected to be in operation next summer. It will recover wastes equivalent to the average domestic wastes from a city of about 575,000 persons and is the final step in the pollution abatement program of the company cooperating with the state water board.

Physical Examination of School Children.—Illinois school children will be given physical examinations beginning Child Health Week, May 4-10, to be completed some time before the September opening of the schools, the Illinois State Medical Society announced April 6. The examinations are a part of the state law passed in June 1945 requiring, "as soon as practicable," that examinations be made of school children in all public, elementary and secondary schools at the time they enter first grade and again in not less than every fourth year thereafter. The exceptions are children whose parents object on religious scruples. Examinations will be made individually or in groups by appointment in the offices of physicians or in some communities at the schools.

Cook County Mosquitoes.—The Advisory Committee of the Chicago-Cook County Health Survey recommended an expanded attack on the mosquito population of Chicago and Cook County. The report was prepared by the United States Public Health Service as part of an audit of health conditions asked by city and county officials. The Des Plaines Valley and the North Shore Mosquito Abatement district, which began operation in 1928, are the only anti-mosquito agencies in the county. Using figures from a federal Works Progress Administration survey of the mosquito problem in 1940, the report disclosed that, of the estimated 66,698,000,000 mosquitoes in the county as a whole, 24 per cent, or 16,000,000,000 were produced in Chicago within Lake, Hyde Park and Calumet townships. If the seven southern townships within the county—Palos, Worth, Orland, Bremen, Thornton, Rich and Bloom—are added, "we find that 48 per cent of the breeding places within the county are within these ten southern townships and 49.6 per cent of mosquito production occurs therein." The report suggested enlargement of the Des Plaines Valley Abatement District to include the southern section and formation of new abatement districts in other parts of the county if necessary. The Des Plaines district has a permanent staff of ten, which is tripled during the mosquito season, and it annually spends about $45,000 on construction work, such as ditching, and on maintenance and control measures. The North Shore district has a similar staff. The most important two types of mosquitoes from the pest standpoint are Culex pipiens and Aedes vexans. The former breed in water collections near human habitations and are vicious biters both indoors and out. Aedes vexans rarely goes inside habitations and is particularly troublesome on porches, in yards and in recreational areas during the summer. It deposits eggs in dry depressions, and they hatch when the depressions become flooded. They resist winter temperatures and produce early spring broods. Two forms of Anopheles are found in the Cook County area but not in sufficient quantities to be of any great health hazards. The report adds, however, "it should always be borne in mind that, where Anopheles quadrimaculatus is prevalent and where persons infected with malaria come into the area there is always the possibility of a flare-up in that disease."

Chicago

The Bacon Lecture.—Hermann J. Muller, Ph.D., professor of zoology at Indiana University, will deliver the 1947 Charles Sumner Bacon lecture at the University of Illinois professional colleges, Wood and Polk streets, at 1 p. m. May 28 on "Human Erosion by Mutation." It is being sponsored by the department of obstetrics and gynecology.

The Joseph Capps Prize.—The Institute of Medicine of Chicago is again offering the Joseph Capps Prize of $400 for the most meritorious investigation in medicine or its specialties or in the fundamental sciences, provided the work has definite bearing on some medical problem. Competition is open to graduates of Chicago medical schools who completed their internship or one year of laboratory work in 1945 or thereafter. Manuscripts must be submitted to the secretary of the Institute of Medicine of Chicago, 86 East Randolph Street, Chicago 1, not later than December 31.

Northwestern University Medical Center.—Another step toward the $100,000,000 medical center now being established on the Chicago campus of Northwestern University Medical School was taken April 9 when Dr. J. Roscoe Miller, dean, announced receipt of the first of several gifts expected to total more than $5,000,000 for the creation of a fund to facilitate expanded research in the field of venereal diseases, other public health problems and medical education. The initial gift of $190,172, with others to follow in succeeding months, has been made from assets of the Public Health Institute of Chicago, founded in 1920 and supported by a large group of Chicago business men, which ceased operation early this year. Both the principal and the income from the half million dollar fund will be employed for research as well as for treatment and examination of patients in the clinic. Equipment and other physical property of the institute are to be turned over to the university to be used in connection with the fund. Erection of a neuropsychiatric hospital is assured through a bequest of a million and a half dollars from the late Mrs. Joy Morton. The Veterans Administration soon will build on the Chicago campus a 600 bed cancer hospital for the study and treatment of cancer. Mercy Hospital has purchased land adjacent to the campus on which it will erect a $10,000,000 hospital. Other hospitals, now located in various parts of Chicago, likewise are planning to move to or near the Chicago campus.

IOWA

Course in Audiometry.—The State University of Iowa will again offer an intensive four weeks course in audiometry and the fitting of hearing aids under the department of speech, psychology and otolaryngology from June 23 to July 19. A series of week end lectures and round table discussions on various aspects of hearing conservation will be part of the summer program. The speakers will be Mrs. Spencer Tracy, director of the John Tracy Clinic, Los Angeles; Dr. Helen Lane, principal, Central Institute for the Deaf, St. Louis; Dr. Werner Mueller, associate in otolaryngology, Massachusetts Eye and Ear Infirmary, Boston, and Harvard Medical School, and Martin F. Palmer, Sc.D., director, Institute of Logopedics, the Municipal University of Wichita, Kan. Inquiries may be addressed to Jacqueline Keaster, Assistant Professor, Speech and Otology, Speech Clinic, State University of Iowa, Iowa City.

KANSAS

Director of State Board Resigns.—Mr. Paul D. Haney, after fifteen years of service to the Kansas State Board of Health, has resigned the position of director and chief engineer of the division of sanitation, which he has held since 1942, to become an associate professor of sanitary engineering at the University of North Carolina, Chapel Hill. Mr. Ben L. Williamson, Des Moines, has accepted the appointment as director of the division of sanitation.

Establish a Cancer Registry.—The University of Kansas School of Medicine and Hospital, Lawrence-Kansas City, under the direction of the division of cancer control of the state board of health, is establishing a cancer registry. Abstracts of about 800 cases of cancer for the year 1945 from the records of the department of pathology have been completed. Cancer records from the William Newton Memorial Hospital and St. Mary's Hospital at Winfield have also been received. This is one of the initial steps leading to the establishment of diagnostic cancer clinics as approved by the cooperative cancer control group in Kansas, the Kansas Medical Society, the Kansas Division, American Cancer Society, and the Kansas State Board of Health.

LOUISIANA

University Appointments.—The Louisiana State University School of Medicine, New Orleans, announces the following faculty appointments: Dr. Jerome T. Syverton, formerly associate professor of bacteriology, University of Rochester School of Medicine and Dentistry, Rochester, N. Y., as professor and head of the newly formed department of microbiology; Dr. Curtis J. Lund, Madison, Wis., formerly associate professor of obstetrics and gynecology, University of Minnesota Medical School, Minneapolis, as professor of obstetrics and gynecology on a full time basis; Harold L. Brauer, instructor in pharmacology, Harvard Medical School, Boston, as assistant professor of pharmacology; Leon Churney, Ph.D., instructor in physiology, University of Pennsylvania, Philadelphia, as assistant professor of physiology; Dr. Allan L. Segal, instructor in radiology, Columbia University College of Physicians and Surgeons, New York, as clinical assistant professor of radiology; Dr. James A. Wilson, resident in obstetrics and gynecology, Charity Hospital, New Orleans, as full time instructor in obstetrics and gynecology; Dr. Harry D. L. Kaye, assistant in surgery, Yale University as full time instructor in surgery; Dr. Philip B. Johnson, New Orleans, recently released from military service, as instructor in medicine. Other recent appointments include Dr. Juan E. Morales, New Orleans, as clinical assistant in neuropsychiatry; Dr. Marie L. Surgi, New Orleans, as assistant in pediatrics, and Dr. Robert M. Rose, Buffalo, as clinical assistant in orthopedics.

MAINE

Personal.—Dr. John G. Towne, Waterville, has resigned from the Maine Board of Registration of Medicine after eighteen years' service.——Dr. Roscoe L. Mitchell, Augusta, Maine state health director, has been elected vice president of the U. S. Association of State and Territorial Health Officers.

MASSACHUSETTS

Appoint Public Relations Executive.—The Massachusetts Medical Society has announced that a full time public relations executive will become a part of the organization July 1. Dr. John F. Conlin, Boston, a graduate of Tufts College Medical School, Boston, 1938, has been appointed director of medical information and education. After an internship at St. Elizabeth's Hospital, Boston, and a residency at Captain John Adams Hospital in Chelsea, he entered the army in 1942 and was discharged with the rank of colonel in 1946. He is now attending courses at the Harvard School of Public Health.

MICHIGAN

Personal.—Dr. Arthur G. Baker, Grand Rapids, has been appointed health officer of Allegan County. Dr. Baker, a graduate of the University of Michigan Medical School in 1943, formerly was assistant health officer in Calhoun County.

Short Practical Nursing Course.—St. Joseph Mercy Hospital, Pontiac, April 1 began enrolling women between the ages of 17 and 30 for a twelve month basic training session in nursing to prepare auxiliary personnel for the care of the sick. The course will include six weeks of basic training at St. Joseph Mercy Hospital in Detroit. At the end of a year certificates will be issued recognizing each trainee as a practical nurse.

MISSISSIPPI

Annual Meeting at Biloxi.—The annual meeting of the Louisiana-Mississippi Ophthalmological and Otolaryngological Society will be at Biloxi May 5. Drs. Samuel Fomon, New York City, will address the group on "The Rhinoplastic Operation and the Restoration of Nasal Function"; Peter C. Kronfeld, Chicago, "Newer Trends in the Treatment of Ocular Diseases," and Ralph Bowen, Houston, Texas, "Allergic Problems Seen by the Ophthalmologist and Otolaryngologist." The J. Raymond Hume Memorial Address will be delivered by Dr. Henry L. Williams, Rochester, Minn., on "Ménière's Disease."

MISSOURI

Dr. Moore Appointed Dean.—Dr. Robert A. Moore, who has been professor of pathology at Washington University School of Medicine, St. Louis, since 1939 and has served as acting dean of the school of medicine for the past year, has been appointed dean of the school. Dr. Moore is assistant secretary of the American Board of Pathology, editor of the *Journal of Gerontology* and during the war served as civilian resident consultant to the Army Medical Museum and to the Secretary of War on epidemic diseases and on committees of the National Research Council.

NEW JERSEY

New Diabetes Association.—The New Jersey Diabetes Association, affiliated with the American Diabetes Association, has been organized with Dr. Benjamin I. Saslow, Newark, chairman of the organizing committee. Disseminating knowledge of diabetes, educating the public, cooperating with associated groups and conducting clinical, experimental and demographic studies of diabetes are its aims. Interested physicians should contact Dr. Saslow at 102 Shanley Avenue, Newark 8.

Cooperative Mosquito Control.—Wallace T. Eakins of the state department of health, Trenton, in an address before the annual meeting of the New Jersey Mosquito Extermination Association April 4, reported that since the cooperative plan of malaria control went into effect in New Jersey in 1944 only 12 persons were known to have been infected by malaria within the state; however, 3,000 cases of imported malaria have been reported in New Jersey since 1944, mainly among returned service men.

Diphtheria Increased in 1946.—Reports received by the state department of health show that all but one of the twenty-one counties in the state reported cases of diphtheria in 1946, making a total of 120. The increase in cases over the previous year was 80 per cent. Counties reporting the largest number of cases were Camden, Hudson and Middlesex. The state department of health provides sixty distributing stations throughout the state where toxoid can be obtained by physicians free of charge.

NEW YORK

Four County Clinic Day.—Genesee, Livingston, Orleans and Wyoming County medical societies met April 9 in Rochester for an all day clinic program. Subjects discussed were "Gynecology in General Practice," "Plasma Therapy in Medicine, Surgery and Emergencies," "Tumors of the Gastrointestinal Tract" and "Diagnosis and Management of Rheumatic Fever." Dr. Konrad E. Birkhaug, Albany, New York State Department of Health, delivered the dinner address on "Immunization with BCG."

Personals.—Governor Dewey has appointed Dr. Frank A. Mastrianni of Mechanicsville coroner of Saratoga County to succeed the late Dr. Arthur W. Johnson. Dr. Mastrianni is president of the Saratoga County Medical Society and has been health officer of Mechanicsville for many years.——Dr. Ray E. Persons, Cairo, has been elected president of the Greene County Memorial Hospital staff to succeed Dr. T. Earl McQuade.——Dr. George Weber, Albany, has been appointed full time medical director of the Ulster County Tuberculosis Hospital at Kingston.

New York City

Personal.—At the 100th graduating exercises of Hahnemann Medical College and Hospital of Philadelphia, April 3, Dr. Samuel Weiss, New York, was awarded the degree of Doctor of Science.

Extend Children's Diagnostic Services.—An extension of the diagnostic service of the Children's Tumor Registry of Memorial Hospital was made early this year, with the establishment of the Children's Diagnostic Clinic. The service is offered to pediatric patients of hospitals and private physicians for the diagnosis of neoplastic disease and is available for ambulant or bed cases. The investigations will be performed at cost or without charge if the patient is unable to pay. On completion of the study the patient will be referred to the physician or institution interested, with a report of the findings. If therapeutic recommendations are indicated and requested, they will be made. Appointments may be made by mail or telephone.

OHIO

Annual State Medical Meeting.—The annual meeting of the Ohio State Medical Association will be held in Cleveland May 6-8 in the Public Auditorium and Hotel Cleveland under the presidency of Dr. Edgar P. McNamee, Cleveland. Speakers at the general sessions include:

Dr. Theodore L. Squier, Milwaukee, Hazard of Drug Hypersensitivity in Chemotherapy.
Dr. Philip Levine, Raritan, N. J., Clinical Importance of the Rh Factor.
Dr. John Q. Griffith Jr., Philadelphia, Rutin: Therapy for Capillary Abnormality in Hypertension.
Dr. Alan F. Guttmacher, Baltimore, Artificial Insemination: Indications and Technic.
Dr. Jerry C. Price, New York, Care of the Epileptic Person.
Dr. Zacharias Bercovitz, New York, Diagnosis and Treatment of Diarrheas and Dysenteries.
Dr. Andrew H. Dowdy, Rochester, N. Y., The Age of Atomic Power.

A new feature of the sessions are the instructional courses providing practical lectures and demonstrations on questions and problems arising most frequently in everyday practice. Cards for admission may be obtained in advance of the meeting on application to the Columbus Office, Ohio State Medical Association.

PENNSYLVANIA

Personal.—Dr. Ernest G. Williamson, Philadelphia, for many years resident surgeon at Presbyterian Hospital, has been appointed chief surgeon there. He is a graduate of Jefferson Medical College of Philadelphia and later completed postgraduate work at the University of Edinburgh, Scotland.

Philadelphia

Dr. Lahey to Lecture.—The first annual Phi Delta Epsilon lecture at the Hahnemann Medical College and Hospital of Philadelphia will be delivered by Dr. Frank H. Lahey, director, Lahey Clinic, Boston, May 12 on "Surgery of the Stomach, Duodenum and Jejunum."

RHODE ISLAND

Annual State Medical Meeting.—The Rhode Island Medical Society will hold its 136th annual meeting May 14-15 in the society's library at Providence under the presidency of Dr. Herman C. Pitts, Providence. The Charles V. Chapin Oration will be delivered by Dr. Stanhope Bayne-Jones, professor of bacteriology, Yale University School of Medicine, New Haven, on "Control of Typhus Fever." He will receive the Chapin Medal award from the city of Providence at the dinner meeting at the Narragansett Hotel. Among the speakers for the general program will be:

Dr. Malcolm J. Farrell, Waverly, Mass., Psychiatric Lessons Learned in the Army.
Dr. Chester S. Keefer, Boston, Antibiotic Agents in Clinical Medicine.
Dr. Elmer L. Sevringhaus, Nutley, N. J., Use of Estrogens and Progesterone.
Dr. William D. Wolfe, Baltimore, Common Dermatologic Conditions and Their Treatment.

WEST VIRGINIA

Rapid Treatment Center Transferred to State Department.—The Kanawha Valley Medical Center, the state's rapid treatment center, South Charleston, was transferred April 1 from the federal government to the state department of health. The present staff of forty-five, including two doctors, is being retained. During the three years the center was operated by the government 10,341 persons were treated. Of these, more than one fourth were under 21 years of age, 17.4 per cent between 18 and 21, and 1.3 per cent infants under 1 year of age. Other persons treated have ranged up to more than 60 years of age. The cost per patient for the treatment of syphilis has been about $46. After July 1 the state will probably assume about 30 per cent of the cost of the center.

Annual State Medical Meeting.—The eightieth annual meeting of the West Virginia Medical Association will be held at Charleston, May 12, under the presidency of Dr. Wade H. St. Clair of Bluefield. As usual, there will be no section meetings, but all the sections and affiliated societies will have representation on the program. Only the Tuesday night session will be held in the Daniel Boone Hotel. All other meetings, including both sessions of the house of delegates, will be held in the auditorium at the Shrine Mosque. Among the speakers at the scientific sessions will be:

Dr. Norman Treves, New York, Diagnosis and Treatment of Cancer of the Breast.
Dr. James G. Arnold, Baltimore, Prefrontal Lobotomy.
Dr. Emmerich von Haam, Columbus, Ohio, Clinical and Pathologic Concept of Hypersplenism.
Marjorie Shearon, Ph.D., Washington, D. C., Bureaucratic Control of Medicine.
Dr. James W. Bruce, Louisville, Ky., Infant Diarrhea.
Dr. Mark L. Gerstle Jr., New York, Psychiatry and the General Practitioner.
Dr. Joseph T. Beardwood, Philadelphia, The Modern Use of Insulin.
Dr. Walter C. Alvarez, Rochester, Minn., Puzzling Types of Abdominal Pain.
Dr. Arthur M. Master, New York, Diagnosis and Treatment of Acute Coronary Diseases.
Dr. Harrison H. Shoulders, Nashville, President, American Medical Association, Some Problems in the Economics of Medical Care.
Dr. R. Townley Paton, New York, Corneal Grafts.
Dr. John H. Foulger, Wilmington, Del., New Method of Studying Efficiency of the Heart and Circulation.
Dr. Louis H. Douglas, Baltimore, Abdominal Pregnancy.
Dr. Robert L. Bennett Jr., Warm Springs, Ga., Responsibility of the Physician in the Care of Acute and Convalescent Poliomyelitis.

Entertainment includes section and society luncheons, the past president's dinner Sunday night, a dance Tuesday night, a tea and reception at the executive mansion Wednesday afternoon, the annual banquet and ball Wednesday evening and the annual tennis and golf tournaments.

WISCONSIN

Appoint Professor of Physical Medicine.—Dr. Harry D. Bouman, formerly assistant professor of physical medicine, Northwestern University Medical School, Chicago, has been appointed associate professor of physical medicine at the University of Wisconsin Medical School, Madison. Dr. Bouman, a graduate of the University of Amsterdam, has held a Skostokvis Research Fellowship at the University of Paris and was a Rockefeller Foundation fellow in neurophysiology at University College, London. During the past six years his research has been directed toward the problem of infantile paralysis.

Psychologic and Psychiatric Aspects of Pediatric Practice.—An opportunity for study of the emotional, psychologic and psychiatric problems in pediatric practice is to be made available to those who are directing their work into these areas through the facilities of the University of Wisconsin Medical School, Madison, and the Wisconsin State Board of Health. This work will be given at the medical school and the State of Wisconsin General Hospital, Madison, from April 28 to May 18. Dr. Benjamin M. Spock, now associated with the Mayo Clinic, Rochester, Minn., as psychiatric consultant in pediatrics, and Dr. Milton J. E. Senn, associate professor of pediatric psychiatry, Cornell University Medical College, New York, will direct the work. Further details will be available through Dr. Llewellyn R. Cole, Coordinator of Graduate Medical Education, the Medical School, 418 North Randall Avenue, Madison 6, Wis.

HAWAII

Annual Medical Meeting.—The annual meeting of the Hawaii Territorial Medical Association will be held May 1-4 at the Lihue Parish House, Lihue, Kauai, under the presidency of Dr. Jay M. Kuhns, Lihue. Dr. Cyrus C. Sturgis of Ann Arbor, Mich., will speak on "Thirty Years' Experience with Coronary Artery Disease." Among other presentations will be:

Dr. Rogers L. Hill, Honolulu, Acute Appendicitis in Measles.
Dr. Tell Nelson, Honolulu, Management of the Allergic Patient.
Dr. Edward F. Slaten, Honolulu, Familial Erythroblastic Anemia.
Dr. Joseph E. Strode, Honolulu, Tumors Within or Adjacent to the Mediastinum.

GENERAL

Special Society Elections.—At a meeting of the Tri-State Medical Association in Greensboro, N. C., Dr. Charles N. Wyatt, Greenville, S. C., was made president-elect and Dr. S. Raymond Thompson, Charlotte, became president of the association.

Rockefeller Foundation Appropriations.—The Rockefeller Foundation, which made appropriations totaling $19,481,576 during 1946, gave $1,395,985 to aid in medical science. Of this amount $360,435 was made to psychiatry, neurology and allied sciences, $272,000 to endocrinology, $75,350 to medical education, $88,200 to group medicine and medical economics and $600,000 to fellowships and grants-in-aid.

Allergy Research Fund.—The American College of Allergists announces a grant of $1,500 from Luziers, Inc., Kansas City, Mo., for continuation of allergy research in the field of dermatology. This fund will be under the direction of Dr. Rudolph L. Baer, assistant attending physician, New York Skin and Cancer Hospital, New York, and Dr. Stephan Epstein, Marshfield Clinic, Marshfield, Wis.

The S. S. Frederick Banting.—At the request of a group of American physicians in 1943 the U. S. Maritime Commission named a liberty ship in honor of Sir Frederick Banting, the discoverer of insulin. In doing so the rule that all American ships must be named for citizens of this country was set aside. The ship was presented to the British commonwealth. Since Dec. 30, 1943, when the ship was delivered under lend lease, it has been operated by the British to ports in Japan, China, Australia, India, the Mediterranean and Canada.

Venereal Disease Pamphlets.—The U. S. Public Health Service has just issued three new publications to spur an effective educational program concerning venereal disease: "Facts About Syphilis and Gonorrhea," "Wedding Plans" and "Protecting the Unborn Baby." Sample copies are available free on request to U. S. Public Health Service, Washington 25, D. C., or quantity orders may be purchased from the Superintendent of Documents, Government Printing Office, Washington 25, D. C.

Traffic Safety Awards.—Connecticut and Washington, D. C., have been named grand award winners in the 1946 National Traffic Safety Contest conducted by the National Safety Council. From the 1,355 cities participating in the contest, the annual special awards for sustained records in excellence in traffic safety for five or more consecutive years were given to Milwaukee and Beaver Dam, Wis.; Stillwater, Okla., and Coshocton, Ohio. Cities competing in the contest represented more than 90 per cent of the present population of the United States.

Clinical Research on New Drug.—Dr. William A. Nicholson, Duke Hospital, Durham, N. C., and Dr. Robert A. Goodwin, Vanderbilt University Hospital, Nashville, Tenn., have been awarded research grants by Sharp and Dohme, Inc., Philadelphia, it was announced February 19. Both grants are in support of clinical studies on the evaluation of caronamide, 4'carboxyphenylmethanesulfonamide, a new drug. Used in conjunction with penicillin, caronamide is said to inhibit the excretion of penicillin from the body and serves to maintain high therapeutic concentrations of the antibiotic in the blood for longer periods of time.

Birth Rate Increasing in United States.—According to the March issue of the United Nations Monthly Bulletin of Statistics, the United States birth rate is the highest in history. Decreasing steadily from 1915 to a low point in 1933, the rate in the United States rose from 17.1 births per thousand inhabitants in 1937 to an annual rate of 28.8 in November 1946. Of the twenty countries included in the tables, Uruguay, Chile and Belgium are static and India and Egypt show noticeable declines. Palestine showed the highest birth rate, 43.4. The trend of the birth rate in World War II differs from that in World War I. A drop occurred during World War I and a slight rise only after the Armistice, while in this decade a general rise has occurred through the war years.

Special Society Elections.—At a recent meeting the American College of Allergists elected Drs. Hal M. Davison, Atlanta, Ga., president-elect; George E. Rockwell, Milford, Ohio, and Willard S. Small Jr., Pasadena, Calif, vice presidents, and Frederick W. Wittich, Minneapolis, secretary-treasurer. Dr. Leon Unger, Chicago, was installed as president.——The Society of Physical Medicine has elected Drs. Earl C. Elkins, Rochester, Minn., president; Miland E. Knapp, Minneapolis, vice president; Milton G. Schmitt, Chicago, secretary-treasurer. Dr. William D. Paul, Iowa City, was installed as president.——The American Board of Pathology announces the election of Drs. Nathan C. Foot, New York, president; William Sunderman, Philadelphia, vice president, and Robert A. Moore, St. Louis, secretary-treasurer.——The Central New York Eye, Ear, Nose and Throat Society has elected Drs. Uri Doolittle president and Alfred W. Doust, both of Syracuse, secretary.

Records of Committee on Medical Research, OSRD.—In closing the office of the Committee on Medical Research of the Office of Scientific Research and Development, Washington, D. C., the records that accumulated during the war years 1941-1946 are being distributed to libraries throughout the country in order that they may be available to interested persons. Among the records so distributed are complete sets of the seventy-eight issues of the (1) weekly bulletin entitled "Summary of Reports Received by the Committee on Medical Research"; these bulletins contain abstracts of the "open" and "restricted" reports received from investigators; (2) bound and indexed sets of reprints of published work done under OSRD-CMR contracts; (3) indexed sets of the 734 numbered reports issued by the Board for the Coordination of Malarial Studies; (4) Aviation Medicine Reports: a complete set of the 505 numbered reports issued by the National Research Committee on Aviation Medicine; (5) final and interim reports of CMR investigators. Copies of almost all these reports are on file in the Office of Medical Records, National Research Council, 2101 Constitution Avenue, Washington, D. C., where they can be consulted but cannot be sent out on loan.

Danger in the Kitchen.—The Statistical Bulletin of the Metropolitan Life Insurance Company estimates from studies among Metropolitan industrial policyholders and among other groups that about 6,000 persons are killed annually in the United States from mishaps in the kitchen and that many times that number are injured more or less seriously, though not fatally. In no other room in the house does such a concentration of hazards exist. The most frequent type of fatal accident in the kitchen is burns and scalds. Falls, which rank second, are said to be responsible for about 1,500 deaths in kitchens annually. Among the hazards contributing to these falls are wet or waxed floors, worn linoleum or other floor coverings, unanchored small rugs, pails or other objects left on the floor; falls from tables, ladders, windows, chairs and highchairs. Gas poisoning is a relatively frequent cause of accidents in the kitchen, more particularly among men who doze off while heating coffee or other fluids which boil over and put out the gas flame. Trouble may arise from a defective pilot light which is out or is not functioning; gas jets may be turned on unknowingly by persons brushing against them; some people may turn on the gas and forget to light it. Other contributing conditions to such deaths are burning gas with an excessively high flame in a poorly ventilated kitchen, improperly installed heaters and gas appliances in poor repair. Fatalities in the kitchen are also caused not infrequently by such poison compounds as roach powders or rat poisoning carelessly kept and mistakenly used for flour or baking powder. The modern kitchen is a combination bakery, cannery, laundry, restaurant, factory and butcher shop and playground. In industry, where similar hazards exist, either state officials or trained employees help to control accidents, but in the home this responsibility usually falls on the woman of the house, who should know where the chief dangers lie.

CANADA

Personal.—Dr. Kenneth E. Dowd, Montreal, Que., chief medical officer of the Canadian National Railways and Trans-Canada Air Lines since 1943, has been elected chairman of the medical and surgical section of the Association of American Railroads. During the second world war he served as medical consultant in civil aviation to the Royal Canadian Air Forces and as chief medical consultant of the Royal Air Force Ferry Command.

LATIN AMERICA

Personal.—Dr. Guillermo Diaz, Lima, Peru, who recently visited the headquarters of the American Medical Association in Chicago, is head of the National Department of Sanitary Education in Peru. With a scholarship from the Institute of Inter-American Affairs he will do postgraduate work on public health and sanitation and visit American medical centers.

New Medical Journal.—*Archivos de Neuro-Psiquiatria,* the official organ of the Sanatorio Dr. Galigarcia, which recently appeared, is a quarterly journal with editorial headquarters in Havana, Cuba. The second issue, September 1946, contains sections of editorials, medical news, original articles and abstracts of articles. Some of the articles are translated from English or Portuguese medical journals.

FOREIGN

Great Britain

Plans for National Health Services.—The National Health Service Act will probably come into operation on April 1, 1948. Mr. Aneurin Bevan, minister of health, recently made this announcement to the local health authorities, according to British Information Services, when he asked them to start reorganizing the home and health services for which they will be responsible under the act—services which will provide free health care to all residents of Britain regardless of their financial status. Mr. Bevan gave the following time table for submitting proposals concerning the reorganization of the various services:

Vaccination and immunization	June 30, 1947
Ambulance services	
Midwifery	August 31, 1947
Health nursing	
Prevention of illness, care and after care	
Domestic help	
Duties under lunacy and Mental treatment act and Mental deficiency acts	
Care of mother and young children	September 30, 1947
Health centers	November 30, 1947

The aim is to frame plans which will provide as efficient and comprehensive a service as prevailing conditions permit. The membership of the health committee of each local health authority must be considered. The act provides that while a majority of the health committee must be members of the parent authority, outside persons may also be appointed, thus allowing the inclusion of doctors and other experts. Mr. Bevan has also suggested that, in view of the nature of the services with which the committee will be concerned, its membership should include an adequate proportion of women. Preliminary proposals about the provision of health centers will cover the reservation of suitable sites for such centers.

Marriages

Paul A. Meredith, Caro, Mich., to Miss L. Virginia Hunter of Howard, Kan., in Chicago Nov. 22, 1946.

Norman Balfour Kanof, Richmond, Va., to Miss Joan Winifred Sher of Brooklyn Dec. 15, 1946.

Charles Hyatt Place, Poundridge, N. Y., to Miss Ruth Evelyn Murray of Brooklyn January 18.

Wilfred S. Miller, Assumption, Ill., to Mrs. Felice Connolly of Taylorville in Kewanee Nov. 25, 1946.

David Marcus, Astoria, N. Y., to Miss Shirley Lenore Edelstein of Rego Park recently.

Max Benjamin Milberg, Brooklyn, to Miss Lillian Gertrude Kling of New York March 9.

William I. Poole, Calvert City, Ky., to Mrs. Verda Lawson of Paducah Dec. 10, 1946.

Samuel Myerson to Miss Phyllis Greenhill, both of New York, March 16.

Deaths

Martin Aaron Bernfield ⊕ San Antonio, Texas; born in Jaffa, Palestine, July 19, 1892; University of Michigan Medical School, Ann Arbor, 1929; interned at the City of Detroit Receiving Hospital; during World War I served as an intelligence officer in the Russian army; later joined the British army and served in the Upper Sudan campaign in 1919; at the outbreak of World War II was commissioned passed assistant surgeon in the U. S. Public Health Service with the rank of captain; at the time of his death was associated with the San Antonio regional office of the Veterans Administration as medical officer full grade, neuropsychiatric examiner; died Aug. 22, 1946, aged 54, of coronary thrombosis and embolus of the abdominal aorta.

Ira Price Burdine Jr. ⊕ Amory, Miss.; Tulane University of Louisiana School of Medicine, New Orleans, 1931; interned at the Charity Hospital in New Orleans and the Mississippi State Charity Hospital in Jackson; served a residency at the Mississippi State Tuberculosis Sanatorium in Sanatorium; began active duty as a captain in the medical corps, Army of the United States, on Sept. 29, 1942; promoted to major; released from service Aug. 27, 1946; died in the (Kennedy) Veterans Administration Hospital, Memphis, Tenn., Oct. 29, 1946, aged 40, of acute gastritis and congestion of the lungs.

James Darrah Osborn ⊕ Frederick, Okla.; born Dec. 23, 1879; Medical Department of Tulane University of Louisiana, New Orleans, 1901; served as secretary of the Oklahoma State Board of Medical Examiners and Board of Examiners in the Basic Sciences; president of the Oklahoma State Medical Association; member of the National Board of Medical Examiners; president-elect of the Federation of State Medical Boards; formerly superintendent of public health; killed February 7, aged 67, when a St. Louis bound Frisco passenger train was derailed at Republic, Mo.

Isaac Rosenbaum Pels ⊕ Baltimore; born in Baltimore, Oct. 8, 1881; Johns Hopkins University School of Medicine, Baltimore, 1906; assistant professor of dermatology at his alma mater; specialist certified by the American Board of Dermatology and Syphilology; member of the American Dermatological Association and the American Academy of Dermatology and Syphilology; on the staffs of the Johns Hopkins, Bon Secours, Sinai, Union Memorial and Baltimore City hospitals and the Church Home and Infirmary; died February 4, aged 65, of cardiovascular disease.

James Cox Archer ⊕ Senior Surgeon, U. S. Public Health Service, Fort Stanton, N. M.; Baylor University College of Medicine, Dallas, 1933; entered the U. S. Public Health Service in 1934; in charge of the U. S. Marine Hospital, where he died February 1, aged 43, of coronary occlusion.

Peter C. Berns, Linton, Ind.; Missouri Medical College, St. Louis, 1897; member of the American Medical Association; served with the British army during World War I; died January 16, aged 74.

Marshall Merrill Best, Honolulu, Hawaii; University of Cincinnati College of Medicine, 1927; member of the American Medical Association and the Ohio State Medical Association; awarded the Bronze Star medal for meritorious service during World War II; died January 3, aged 46.

Zelly Adam Bonoff, New Haven, Conn.; Yale University School of Medicine, New Haven, 1904; died in the New Haven Hospital January 30, aged 66, of arteriosclerotic heart disease.

Andrew Jackson Brown, Clarksdale, Miss.; Chicago College of Medicine and Surgery, 1909; member of the American Medical Association; at one time member of the state board of medical examiners; formerly superintendent of the State Charity Hospital in Natchez; died January 30, aged 71, of carcinoma of the liver.

John Thomas Brown, Forrest City, Ark.; Memphis (Tenn.) Hospital Medical College, 1885; died in a hospital at Memphis, Tenn., January 22, aged 84, of a hip fracture received in a fall.

Joseph R. Burdett, Tennille, Ga.; Bellevue Hospital Medical College, New York, 1889; member of the American Medical Association; died Dec. 9, 1946, aged 84.

Lilburn Ira Burrows, Batesburg, S. C.; Baylor University College of Medicine, Dallas, Texas, 1932; interned at St. Anthony Hospital in Oklahoma City; formerly a medical missionary in India; served during World War II; died in the Veterans Administration Hospital, Columbia, February 27, aged 45, of cirrhosis of the liver.

George Hull Camp, Springfield, Mo.; Emory University School of Medicine, Atlanta, 1920; member of the American Medical Association; served during World War I and II; affiliated with St. John's Hospital, where he died January 29, aged 53, of uremia.

Bernard McHugh Cline ⊕ Atlanta, Ga.; Atlanta College of Physicians and Surgeons, 1905; affiliated with St. Joseph Infirmary, Georgia Baptist Hospital and the Crawford W. Long Memorial Hospital; died January 26, aged 65, of coronary thrombosis.

Allan Loeb Cohn, Shreveport, La.; University of Wisconsin Medical School, Madison, 1937; member of the American Medical Association; for many years a member of the Caddo-Shreveport health unit; died January 22, aged 35.

William Corns, Tama, Iowa; Drake University Medical Department, Des Moines, 1900; member of the American Medical Association; served during World War I; formerly on the staff of the Iowa Soldiers' Home at Marshalltown; died January 26, aged 73, of carcinoma of the stomach.

Anna Elizabeth Mulheron Coyle, Windsor Locks, Conn.; Woman's Medical College of Pennsylvania, Philadelphia, 1912; member of the American Medical Association; school physician and assistant health officer; died January 27, aged 62, of coronary thrombosis.

William Hartwell Cressy, Brooklyn; Chicago College of Medicine and Surgery, 1909; Medical Department of Tulane University of Louisiana, New Orleans, 1914; medical officer in the Serbian army during World War I; died in the Methodist Hospital January 12, aged 67.

Alden Larue Crittenden ⊕ Wichita, Kan.; Rush Medical College, Chicago, 1912; fellow of the American College of Surgeons; on the staff of the Wesley Hospital; died January 20, aged 63, of leukemia.

William Donovan, New York; Bellevue Hospital Medical College, New York, 1898; member of the American Medical Association; died in the Lenox Hill Hospital January 30, aged 78.

Alice Barker-Ellsworth, Long Beach, Calif.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1902; member of the American Medical Association; a medical officer in the army during World War I; served on the Los Angeles County Child Welfare Board; past president of the Women's Medical Association of Los Angeles County; died January 7, aged 70, of cerebral hemorrhage.

Fred Leslie Ervay, Fredonia, Kan.; Keokuk Medical College, College of Physicians and Surgeons, 1908; also a dentist; for many years member of the board of education; died January 22, aged 66, of carcinoma of the bladder.

John O'Fallon Farrar, St. Louis; Barnes Medical College, St. Louis, 1896; died January 25, aged 79, of carcinoma of the liver.

Frank Crist Fisher, Bloomington, Ill.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1903; member of the American Medical Association; on the staff of the Brokaw Hospital and member of the board of the Fairveiw Sanatorium, Normal; an examiner on the U. S. Exemption Board of Bloomington during World War I; died January 24, aged 78, of coronary thrombosis.

Cornelius A. Fossum, Joplin, Mo.; Loyola University School of Medicine, Chicago, 1919; died Dec. 17, 1946, aged 56.

Johanna Gelien, Berkeley, Calif.; Denver and Gross College of Medicine, 1908; member of the American Medical Association and the Colorado State Medical Society; died January 28, aged 78, of coronary occlusion.

John Relda Gideon, Joiner, Ark.; Mississippi Medical College, Meridian, 1912; Kansas City (Mo.) College of Medicine and Surgery, 1920; died January 9, aged 61.

Stowell Burrough Grant, Munnsville, N. Y.; Albany (N. Y.) Medical College, 1906; member of the American Medical Association; past president of Madison County Medical Society; school physician; on the staff of the Oneida City (N. Y.) Hospital; died in Oneida January 23, aged 65, of coronary thrombosis.

Charles William Hamilton, Hood River, Ore.; University of Oregon Medical School, Portland, 1914; city health officer; on the staff of the Hood River Hospital; died in Coos Bay recently, aged 60, of carcinoma of the head of the pancreas.

Charles Merrill Hazard ⊕ Arlington, Iowa; State University of Iowa College of Homeopathic Medicine, Iowa City, 1910; served during World War I; died January 30, aged 61, of cerebral hemorrhage.

James Henry Hill, Talladega, Ala.; Birmingham Medical College, 1909; member of the American Medical Association; served as secretary of the Talladega County Medical Society; county health officer; died January 19, aged 66, of right ventricular failure and renal disease.

Charles Edwin Hood, Ann Arbor, Mich.; Detroit College of Medicine, 1898; at one time health officer of Drayton, N. D.; died in the University Hospital January 29, aged 80, of bronchopneumonia.

John Jones Jack, Stamps, Ark. (licensed in Arkansas in 1903); served as health officer; died January 12, aged 76.

Harry Jarmulowsky ⊕ Paterson, N. J.; Christian-Albrechts-Universität Medizinische Fakultät, Kiel, Prussia, Germany, 1906; on the staffs of the Barnert, General and St. Joseph's hospitals; died January 27, aged 69, of hypertensive heart disease.

J. H. Johns, Westminster, S. C.; Atlanta Medical College, 1898; formerly state senator; died January 28, aged 72.

Grace Elizabeth Atkins Jordan, Boston; Boston University School of Medicine, 1899; died January 15, aged 74, of carcinoma of the kidney.

John McLean Karch, Cincinnati; Ohio State University College of Medicine, Columbus, 1929; member of the American Medical Association; began active duty as a captain in the medical corps, Army of the United States, Sept. 2, 1942; released from service Jan. 19, 1945; served an internship at the Good Samaritan Hospital, where he was on the staff; accidentally killed while hunting February 12, aged 47.

Thomas Junior Kemp, Clayton, Mo.; Columbian University Medical Department, Washington, D. C., 1900; past president of St. Louis County Medical Society; member of the American Medical Association; on the staffs of the Faith and Park Lane Memorial hospitals; died January 23, aged 72, of heart disease.

Frank Peter Knabb ⊕ Valley Park, Mo.; Barnes Medical College, St. Louis, 1902; past president of St. Louis County Medical Society; president of the school board; died in the Missouri Baptist Hospital, St. Louis, January 29, aged 71, of uremia.

William Roscoe Koob, Brayton, Iowa; Ensworth Medical College, St. Joseph, 1892; member of the American Medical Association; died in Long Beach January 16, aged 77, of coronary occlusion.

Lorenz Kronrad, Columbia, S. C.; Medical College of the State of South Carolina, Charleston, 1935; member of the American Medical Association; served during World War II; died January 19, aged 35, of coronary occlusion.

Jean Baptiste LaBorde, Columbia, S. C.; Medical College of the State of South Carolina, Charleston, 1918; member of the American Medical Association; served during World War I, as chairman of the city board of health and as county physician; died January 3, aged 53.

Bernard Vincent Lally, Tiffin, Ohio; Eclectic Medical College, Cincinnati, 1937; member of the American Medical Association; served on the staffs of St. Mary's and Deaconess hospitals in Evansville, Ind.; director of health for Seneca County; died January 28, aged 40, of heart disease, following pneumonia.

Asher Noah Lebensohn, Washington, D. C.; Northwestern University Medical School, Chicago, 1938; interned at Los Angeles County Hospital; formerly on the staffs of the Veterans Administration facilities in San Fernando, Calif., and Wadsworth, Kan.; served during World War II; died Dec. 17, 1946, aged 33.

Clarence Wyman Lincoln, Wayne, Pa.; University of Pennsylvania Department of Medicine, Philadelphia, 1893; served during World War I; died in the Bryn Mawr (Pa.) Hospital January 22, aged 80, of uremia.

John Linder, Neponsit, N. Y.; University and Bellevue Hospital Medical College, New York, 1904; fellow of the American College of Surgeons; served as clinical professor of surgery at the Long Island College Hospital in Brooklyn, where in 1937 a plaque was presented to the Jewish Hospital in recognition of his service as a member of the medical staff; served on the staff of the Beth-El Hospital; died January 12, aged 64.

William H. Little, Alta Vista, Kan.; Kansas City (Mo.) Medical College, 1900; died in Phoenix, Ariz., January 21, aged 78, of cerebral hemorrhage and arteriosclerosis.

George Emory Lochner, Albany, N. Y.; Albany Medical College, 1889; member of the American Medical Association; formerly clinical professor of gynecology at his alma mater; chief of staff at the Brady Maternity Home since its establishment; on the staff of the Memorial Hospital; died January 29, aged 79, of jaundice and intestinal obstruction.

Thomas Dick Longino, Atlanta, Ga.; University of Georgia Medical Department, Augusta, 1870; Jefferson Medical College of Philadelphia, 1882; member of the American Medical Association; Civil War veteran; served on the city council, at various times mayor of Palmetto, mayor of West End when it was a separate corporation from Atlanta and as mayor pro tem of Atlanta; on the board of trustees of the Grady Hospital; died in St. Joseph's Infirmary January 28, aged 100, following prostatic resection.

John Roy McKnight ⊕ Colonel, U. S. Army, retired, Bellwood, Pa.; Jefferson Medical College, Philadelphia, 1906; Army Medical School in 1911; entered the medical corps of the U. S. Army as a first lieutenant in March 1911; served during World wars I and II; rose through the various ranks; became colonel on March 19, 1937; retired April 5, 1945; died January 22, aged 66, of heart disease.

Burton Maltby ⊕ Liberty, Mo.; University Medical College of Kansas City, 1908; served with the British army during World War I and was awarded the British Military Cross; served as county physician, county coroner, member and president of the school board; on the visiting staffs of the Research Hospital in Kansas City and the Excelsior Springs (Mo.) Hospital, where he died January 29, aged 61, of cerebral hemorrhage and carcinoma of the colon.

Charles Raysor May, Bennettsville, S. C.; Medical College of the State of South Carolina, Charleston, 1897; member of the American Medical Association; honorary member, past president and formerly councilor of the Sixth District of the South Carolina Medical Association; past vice president of the Tri-State Medical Association; on the staff of the Marlboro County General Hospital; died January 21, aged 74, of coronary thrombosis.

William Charles Meacham, Oak Park, Ill.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1910; served overseas during World War I and received the Croix de Guerre and several other citations; physician for the Chicago Black Hawks hockey team and the Chicago Cardinals football team; died February 11, aged 60, of coronary occlusion.

Edward Frederick Meyer, Chicago; Jenner Medical College, Chicago, 1900; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1901; served on the staff of the Augustana Hospital; died in St. Mary of Nazareth Hospital January 26, aged 81, of arteriosclerosis.

Stafford T. Mitchell, Chicago; Hering Medical College, Chicago, 1895; died February 13, aged 82, of arteriosclerotic myocarditis.

John Claude Moore ⊕ Seattle; Cooper Medical College, San Francisco, 1895; past president of the King County Medical Society; served on the staffs of the old Seattle City and King County hospitals, as trustee of the Doctors Hospital and one of the six doctors who reorganized Maynard Hospital; died February 16, aged 74, of heart disease.

Michael C. Mullen, Chicago; College of Physicians and Surgeons of Chicago, 1894; associate clinical professor of obstetrics and gynecology at the Loyola University School of Medicine; on the staff of the Mercy Hospital; died February 28, aged 76, of coronary thrombosis.

Charles M. Myers, Dowagiac, Mich.; the Hahnemann Medical College and Hospital, Chicago, 1895; served two terms as state representative; city health officer; for many years member of the board of education, serving as president; served on the library board; died in the Lee Memorial Hospital January 24, aged 82, of coronary occlusion.

Henry Hasswell Nadig, Errol, N. H.; Chicago Homeopathic Medical College, 1898; died in Rowayton, Conn., January 31, aged 70, of coronary thrombosis.

Theodore McGeachy Northrop ⊕ Greenville, S. C.; Vanderbilt University School of Medicine, Nashville, Tenn., 1934; interned at the Greenville City Hospital; on the staffs of St. Francis and Greenville General hospitals; died January 11, aged 38, of uremia.

Frederick William Nueske, Bayshore, N. Y.; Long Island College of Medicine, Brooklyn, 1932; interned at the Nassau Hospital in Mineola; served during World War II; medical consultant for the department of public welfare of Suffolk County; associate staff member at South Side Hospital; died January 29, aged 39, of coronary occlusion.

Robert P. Oppenhimer, Knoxville, Tenn.; Medical College of Virginia, Richmond, 1891; member of the American Medical Association; served as a member of the city school board; died January 26, aged 78, of lobar pneumonia and arteriosclerosis.

Giovanni Paccione, New York; Regia Università degli Studi di Bologna. Facoltà di Medicina e Chirurgia, Italy, 1912; member of the American Medical Association; served during World War I; on the staff of the New York Eye and Ear Hospital; for many years on the staff of the Columbus Hospital; member of the welfare and health departments; died January 22, aged 60, of coronary thrombosis.

George Baldwin Palmer, Rolfe, Iowa; Chicago Homeopathic Medical College, 1899; died in St. Joseph Mercy Hospital, Fort Dodge, January 6, aged 75, of carcinoma of the pancreas.

Thomas Benjamin Pearman ⊕ Richmond, Va.; Medical College of Virginia, Richmond, 1921; member of the Richmond Academy of Medicine and the Southern Medical Association; affiliated with the Retreat for the Sick, Johnston-Willis Hospital, Sheltering Arms Hospital, Medical College of Virginia Hospital and the Grace Hospital, where he died January 12, aged 49, of fibrillation of the heart and hepatic cirrhosis.

Ladislaus Joseph Perenyi, New York; University and Bellevue Hospital Medical College, New York, 1923; member of the American Medical Association; consultant on the staffs of the Mercy and South Nassau Communities hospitals in Rockville Centre; died in Rockville Centre, N. Y., January 19, aged 47, of diabetes mellitus and coronary thrombosis.

Charles Stephen Phalen ⊕ Sparta, Wis.; Northwestern University Medical School, Chicago, 1913; served during World War I; vice president of the staff of St. Mary's Hospital, where he died January 30, aged 64, of coronary occlusion.

Wilson Frank Phillips ⊕ Boston; Boston University School of Medicine, 1898; formerly assistant professor of theory and practice of medicine at his alma mater; consultant in medicine at the Massachusetts Memorial Hospitals, where he died January 29, aged 74, of coronary thrombosis and bronchopneumonia.

Roland Henry Prien ⊕ Gilroy, Calif.; University of Colorado School of Medicine, Denver, 1919; an Affiliate Fellow of the American Medical Assaociation; died January 23, aged 66, of coronary occlusion

James D. Reid, ⊕ Wellsville, Kan.; University Medical College of Kansas City, Mo., 1912; died January 27, aged 65, of carcinoma of the lung.

John Inzer Reid, Montevallo, Ala.; University of Nashville (Tenn.) Medical Department, 1906; member of the American Medical Association; for many years mayor of Montevallo; died in a hospital at Birmingham January 10, aged 65.

John Henry Reynolds, Live Oak, Fla.; University of the South Medical Department, Sewanee, Tenn., 1899; died January 2, aged 73, of arteriosclerosis.

William Weston Reynolds ⊕ Meridian, Miss.; Louisville (Ky.) Medical College, 1898; past president of the Lauderdale County Medical Society; formerly county health officer and member of the state board of health; served as superintendent of the Matty Hersee Hospital; on the staff of the East Mississippi State Hospital; for many years surgeon for the Southern Railway; died in Rush's Infirmary February 2, aged 76.

Joseph Bennett Riddle, Morganton, N. C.; Vanderbilt University School of Medicine, Nashville, Tenn., 1898; member of the American Medical Association; surgeon, North Carolina State Hospital, Morganton; for many years affiliated with the Grace Hospital, where he died January 1, aged 76.

John Franklin Ritter, Maquoketa, Iowa; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1895; member of the American Medical Association; died January 29, aged 77, of coronary occlusion.

Clement J. Rider, Bushnell, Ill.; Baltimore Medical College, 1893; died in Des Moines January 28, aged 79, of chronic myocarditis.

Stacy Herman Rinehardt, Harrisburg, Pa.; Jefferson Medical College of Philadelphia, 1909; served during World War I; died February 8, aged 62, of coronary thrombosis

Sherman T. Rogers, New Albany, Ind.; Eclectic Medical Institute, Cincinnati, 1887; member of the American Medical Association; served as health officer; died in the "Silvercrest" Southern Indiana Tuberculosis Hospital February 6, aged 81.

Hugh Beverly Roney, Pittsfield, Mass.; Hahnemann Medical College and Hospital of Philadelphia, 1909; member of the American Medical Association; on the staffs of the House of Mercy and Hillcrest hospitals; died January 8, aged 60, of heart disease.

Morris Rosenbaum, New York; Columbia University College of Physicians and Surgeons, New York, 1903; specialist certified by the American Board of Ophthalmology; member of the American Academy of Ophthalmology and Oto-Laryngology; on the staffs of the New York Eye and Ear Infirmary and the Mount Sinai Hospital; died February 1, aged 66, of heart disease.

Gerry Weedon Ross, Onsted, Mich.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1880; president of the Onsted State Bank; died February 5, aged 87, of heart disease.

Oswald Herman Roth, Newark, N. J.; Bellevue Hospital Medical College, New York, 1892; member of the American Medical Association; at one time examining physician at the Essex County Jail and the House of Detention; died February 19, aged 76, of coronary thrombosis.

Charles Dudley Saul, Philadelphia; Hahnemann Medical College and Hospital of Philadelphia, 1901; member of the American Medical Association; formerly clinical professor of medicine at his alma mater; served during World War I; affiliated with St. Luke's and Children's Medical Center; died January 8, aged 66, of heart disease.

Philip Harrison Scherer, St. Louis; St. Louis University School of Medicine, 1914; member of the American Medical Association; fellow of the American College of Surgeons; instructor in surgery at the St. Louis University School of Medicine; assistant surgeon, St. Mary's Group of Hospitals; an officer during World War I; died in the Alexian Brothers Hospital February 6, aged 57, of hemorrhage due to peptic ulcer.

Hugh Murdoch Shannon, El Paso, Texas; Hahnemann Medical College and Hospital of Philadelphia, 1907; member of the American Medical Association; died in the William Beaumont General Hospital, January 27, aged 61, of cerebral hemorrhage and hypertension.

Bennett Marion Shelton ⊕ Brownwood, Texas; Baylor University College of Medicine, Dallas, 1918; fellow of the American College of Surgeons; past president of the Brown County Medical Society; served during World War I; served as director of Brown County Water Improvement District and member and president of the school board; president of the Medical Arts Hospital; died January 30, aged 55, of coronary occlusion.

Mathias Joseph Seifert ⊕ Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1901; at one time on the faculty of his alma mater; fellow of the American College of Surgeons; author of several books; on the staffs of St. Mary's of Nazareth Hospital and the Columbus Hospital, where he died January 31, aged 80, of bronchopneumonia and hypernephroma.

Roswell Haydn Smith ⊕ Edgartown, Mass.; Middlesex College of Medicine and Surgery, Cambridge, 1922; chairman of the school board; on the staff of the Martha's Vineyard Hospital, Oak Bluffs; died February 12, aged 52, of cerebral hemorrhage.

Edward Henry Spiegelberg ⊕ Boscobel, Wis.; Rush Medical College, Chicago, 1906; councilor of the Fourth District of the State Medical Society of Wisconsin; died in Milwaukee January 26, aged 65, of coronary occlusion.

Albert Edward Stickley ⊕ Coopersville, Mich.; Grand Rapids Medical College, 1907; veteran of the Spanish-American War and World War I; for many years a member and past president of the board of education; died in the Hackley Hospital, Muskegon, January 23, aged 73, of ruptured aortic aneurysm.

Lydia Webster Stokes, Woodbury, N. J.; Woman's Medical College of Pennsylvania, Philadelphia, 1894; died January 19, aged 76, of carcinoma of the breast.

Clarence Manley Thomas ⊕ Pittsburgh; Western Pennsylvania Medical College, Pittsburgh, 1907; served during World War I; chief anesthetist, South Side Hospital; died January 19, aged 64, of coronary thrombosis.

Robert Lester Waite ⊕ Hartford, Conn.; Johns Hopkins University School of Medicine, Baltimore, 1909; on the staff of the Hartford Hospital, where he died January 6, aged 64, of arteriosclerotic heart disease.

Allen Augustus Weeden ⊕ Woonsocket, R. I.; Tufts College Medical School, Boston, 1905; served during World War I; a medical officer for the North Smithfield draft board during World War II; for many years affiliated with Woonsocket Hospital, where he died January 27, aged 75.

Herbert Q. White, Grand View, Ind.; University of Louisville (Ky.) Medical Department, 1893; served as county coroner; died February 7, aged 76, of heart disease.

Gillespie Blaine Yeaney ⊕ Clearfield, Pa.; Western Pennsylvania Medical College, Pittsburgh, 1903; chief of medical staff of the Clearfield Hospital; died January 31, aged 67, of coronary occlusion.

Foreign Letters

LONDON

(From Our Regular Correspondent)

March 15, 1947.

Appalling Corruption in the Nursing Service of the Egyptian State Hospitals

Dr. A. Cecil Alport, a British physician who was professor of clinical medicine and director of the medical unit, King Fuad First Hospital, University of Cairo, Egypt, has in a book entitled "One Hour of Justice, the Black Book of the Egyptian Hospitals," revealed an almost incredible state of corruption in the nursing service which is performed by males, known as tamargis. Briefly, if the patients, who are poor peasants, have not enough money to bribe the nurses they suffer not only neglect but ill treatment. They are robbed and even assaulted. Some develop what the Egyptian professors term "endogenous hospital disease," disease contracted in a hospital, such as dysentery and enteric fever from flies and pneumonia from unheated wards. The poor who can help it never go into the state hospitals. Europeans and Egyptians never send their servants to these hospitals if they can get them, by payment, into the Christian Mission Hospital or other nongovernment hospitals. In the government hospitals the male nurses are blackmailing gangsters of the worst type. They make patients pay for the medicine ordered for them and the food to which they are entitled. Apart from their blackmailing activities the tamargis steal hospital equipment, instruments, medicine and food.

When Professor Alport could no longer endure these and other scandals in hospital administration he sent his resignation to the university authorities. They sent the professor of anatomy to try to induce him to withdraw his resignation, but he refused. The emeritus professor of physiology followed on the same errand, with the same result. Professor Alport was even offered an increase of salary to silence him. In order to obtain some reform of the nursing service he exposed the scandals in a pamphlet, which he had difficulty in circulating, and now in this book. Personal attacks were made on him by the university authorities when they found that they could not shut his mouth. Thus they have not only done nothing to abolish the scandalous ill treatment of the patients in hospitals but have actively supported it. Here is a country the heir to one of the oldest civilizations in the world which has successfully adopted much of European civilization, including modern hospitals, yet treatment is allowed to be reduced to a farce by the corrupt practices of the nurses.

Laboratory Investigations in the Diagnosis of Virus Infections

Discussing laboratory investigations in the Chadwick Lecture, delivered at the Royal Society of Tropical Medicine and Hygiene, Professor S. P. Bedson complained of the delay in the findings of research passing into everyday knowledge. Much of the work of the past fifteen years had gone unnoticed, and insufficient use was made of the diagnostic procedures which virus research had made available. It was still widely believed that all viruses were too small to be seen with the microscope, yet in quite a number of virus diseases microscopic demonstration of the causal agent was of diagnostic value. This held for trachoma and for conditions due to the nearly related virus of inclusion conjunctivitis. The virus of lymphogranuloma venereum could at times be demonstrated in smears made from inguinal buboes, which occurred in many cases of infection with this virus. Recent work had demonstrated the diagnostic value of smears made from the skin lesions of smallpox. Even when demonstration of the virus by the microscope could not be achieved, histologic changes, such as inclusion bodies, could be looked for. They were always suggestive of a virus infection, and in certain instances, such as the Negri body in rabies, they were diagnostic.

Valuable though microscopy might be in the laboratory investigation of virus disease, as in any infection, the aim of the laboratory should be the isolation and identification of the causal agent. In the case of viruses this entailed the injection of experimental animals or eggs and establishing the viruses preparatory to their study. But unfortunately quite a number of viruses affecting man were so specifically adapted to him that it was impossible to grow them apart from human tissues, and even when animals or the egg were suitable the time consumed in identifying the virus made the procedure of little use in immediate diagnosis. Nevertheless, whenever the diagnosis was in doubt attempts to isolate and identify the virus should be made. It was still far from being generally appreciated that the serologic reactions employed in bacteriology were equally applicable to the identification of viruses or the diagnosis of virus disease. Of these reactions the complement fixation test was probably the most valuable for virus work. It could be used either for the demonstration of the causal virus, as in the diagnosis of smallpox, or for the detection of antibody produced in response to infection, as in influenza, psittacosis, lymphocytic choriomeningitis, lymphogranuloma venereum or mumps.

THE NETHERLANDS

(From Our Regular Correspondent)

Amsterdam, Feb. 15, 1947.

A New Vitamin in Butter

In the laboratories for physiologic chemistry of the University of Amsterdam research has been in progress during recent years under the direction of Professor B. C. P. Jansen on the favorable influence of butter fat on the growth of young rats. Professor Jansen and Dr. J. Boer found that summer butter fat showed a more favorable influence on the growth of young rats than other fats, even winter butter fat. The factor responsible for this action is not identical with any of the known vitamins. The glycerides of the fatty acids from summer butter have, if the unsaponifiable fraction from summer butter is added, a growth promoting action equal to that of summer butter. The factor responsible for this better growth apparently is an unsaturated fatty acid, because the growth promoting action of summer butter fat and of the fatty acids from summer butter fat disappear on hydrogenation. This cannot be due to a diminished food intake or to poor absorption of the fat in the ration having a rather high melting point.

A number of portions of about 2,000 Gm. of methylesters of fatty acids from summer butter were submitted to accurate fractional distillation. The fraction with eighteen carbon atoms which was isolated by fractional distillation of the methylesters of the fatty acids from summer butter appeared to have growth promoting properties; the corresponding fatty acid fraction of the hydrogenated fatty acids did not. Dr. A. J. Kentie, who describes in a recent dissertation these researches, concludes that vaccenic acid seems to possess all the properties mentioned. Vaccenic acid, discovered in 1928, can be produced from Chinese wood oil. Professor E. Brouwer of the Agricultural University of Wageningen has found that the highest concentration of vaccenic acid is in summer butter fat. This explains why the growth promoting factor of summer butter exceeds the growth promoting factor of winter butter. A fraction consisting mainly of vaccenic acid, separated from the fatty acids of summer butter, appeared to have growth promoting properties if added in a concentration of 1 per cent to rapeseed oil. Probably vaccenic acid is one of the growth promoting factors present in summer butter.

New Fees for Dutch Doctors

A large number of mutual assurance foundations exist in the Netherlands which have contracts for the medical aid and assistance of their members with 6,300 Dutch doctors. Only persons with limited revenues can affiliate with such an assurance institute, controlled by the state. Those who are members of a mutual assurance foundation are free to choose or discharge their house doctor. The doctor has to give all medical treatment and aid. Patients can call him at their home whenever they want. Medical treatment by specialists and care in a hospital or sanatorium is also provided by the foundation, if judged necessary by the house doctor.

For all patients who have chosen a special doctor, the doctor was paid a certain annual amount. In the cities a doctor received 4 guilders for adults for a whole year; for children only 1 guilder. A doctor could have up to 2,500 patients affiliated with a mutual assurance company.

Persons with an income higher than the limit fixed by the government and the assurance institutes for affiliating to their foundations had to pay for every visit to their doctor or for every call at their home. The fee is about $1 (it takes 2.68 guilders to equal a dollar).

The contracts by the 172 existing mutual foundations with the doctors was fixed long before the war. But during and after the war the limit of revenues for those who wanted to become affiliated with an assurance foundation were raised from 2,200 guilders to 3,000 guilders and recently to 3,750 guilders a year ($1,500). The raising of the income level was explained by the fact that many persons who could afford to pay their doctor for every treatment before the war, were no longer able to do so because of the increased cost of living.

For the doctors the raising of the income level meant that fewer persons than before were now paying for every treatment, the income of the doctors thus decreasing. Therefore the 6,300 doctors who had contracts with the assurance foundations gave warning of ending their existing contracts on Nov. 1, 1946, saying that the rising cost of living required them to ask for new contracts with better conditions. They continued, however, to give their medical assistance to all their patients.

After negotiations by representatives of the government, the Dutch doctors and the assurance institutes, new contracts for doctors and specialists were fixed on January 20. During 1947 the doctor will receive 4.68 guilders for each patient who chooses him as physician. After 1947, 4.25 guilders will be paid. The fee for children will be equal to that for adults. Although the doctors are not fully satisfied, they hope that living conditions for themselves will be better than before.

Death of Professor van der Wielen

The death was announced of P. van der Wielen, emeritus professor of pharmacy. During his long tenure van der Wielen earned a great reputation. He lectured on pharmacy both to the candidate apothecaries and to medical students. He contributed in many publications to the methods of drug control and pharmaceutic chemistry. In several volumes he commented on the Netherlands Pharmacopeia. One of his services to the medical profession consisted in the joint editorship of the Pharmacotherapeutisch Vade Mecum, whose other editor was Dr. Pinkhof, a victim of the Nazi occupation. This handy book is a compilation of descriptions of almost all available drugs and pharmaceutic preparations, with concise comments on their chemical, pharmacologic and toxicologic properties and suggestions as to their clinical application. This vade mecum has reached many editions and it was kept up to date. There are few practitioners or specialists who do not keep this book close at hand to afford them information on drug therapy. The reliability of this information greatly adds to the safety of therapeutic measures in this country.

International Congress for Orthopedic Surgery and Traumatology at Amsterdam

In September 1948 an international congress for orthopedic surgery and traumatology will be held at Amsterdam. Dr. Henry W. Meyerding of the Mayo Clinic will be chairman of the congress.

SWEDEN

(From Our Regular Correspondent)

STOCKHOLM, March 18, 1947.

New Mental Hospitals

As previously mentioned, the Royal Swedish Medical Board has drawn up a five year plan for the building of new hospitals and the general improvement of the socialized medical service in Sweden. Included in this plan is a proposal for the construction of two special mental hospitals, intended for those sentenced by the courts to psychopathic care and those coming from social welfare institutions, such as alcoholic addicts. As the situation now stands, persons "sentenced" to mental care are sent to special divisions of the insane asylums. The disadvantages of this system are self evident. The patients themselves feel degraded and the institutions have a difficult time taking care of them in that special safety measures must be taken to keep them from running away and so on. These patients do not belong in an ordinary insane asylum, and the medical board, aware of the need for improving the situation, has proposed the construction of two hospitals, preferably in the neighborhood of large industrial towns. Some sort of employment in industry would promote readjustment into society. By building small pavilions and independent "boarding houses" as part of the institutions, the patients could adjust themselves gradually to society, thus eliminating the dangers inherent in a sudden change from a sheltered to a free life.

These new hospitals are still on paper and will be a long time in maturing to reality. Owing to the need for general hospitals, especially in consideration of the health insurance reform of 1950, which will send even more people into the hospitals, it remains to be seen where on the list of new construction these mental hospitals will stand.

Report of Study of Day Nurseries

Sweden has a number of state aided day nurseries for children in large cities throughout the country, not nearly enough for the demand, of course, but relatively more than exist in the United States. A social welfare investigating committee recently made a disturbing report on the incidence of disease in these nurseries. On the basis of a study made of one of the Stockholm nurseries last fall, it was stated that the condition of the children's health was not satisfactory. The nursery children were significantly more susceptible to disease than the control group of children who stayed at home, and the number of cases of illness was far greater. Many of the nursery children have had colds for long periods and many have constant fever. Ear infections are far more numerous. Sinus and kidney inflammations have appeared among the nursery children, but not in the control group. Bacteriologic studies revealed that certain types of bacteria, which do not ordinarily appear in epidemic form, have caused minor epidemics at the nursery and that children are hardly recovered from one infection before they contract another or are perhaps infected with several types of bacteria simultaneously. Recommendations were made for the installation of ultraviolet lamps and the impregnation of floors and textiles with oil to reduce the risk of infection. With such a large percentage of Swedish mothers out at work every day, these nurseries are of the utmost importance in the present state of society.

Correspondence

SENSITIVITY TO SULFONAMIDES OR PENICILLIN

To the Editor:—After reading the report of the case reported on page 849 of the March 22 issue of THE JOURNAL, "Reactions to Penicillin," I was impressed with the fact that the case so described as a serum sickness type of reaction to penicillin was, in reality, an acute reaction to sulfathiazole.

According to the history, the patient went through the first stage of thoracoplasty on Aug. 13, 1946. At that time 3 Gm. of sulfathiazole crystals was sprinkled in the wound. On September 8 the second stage was accomplished with 3 Gm. of sulfathiazole crystals again sprinkled in the wound. The untoward symptoms began on the day of surgery. The penicillin had been given for only three days prior to surgery. The time element evidence points to an immediate reaction to sulfathiazole. Serum sickness reactions usually begin seven to ten days after the initial administration.

I have seen several cases like the one described as a result of the surgical use of sulfathiazole cyrstals. The literature is full of febrile reactions, dermatitis and other conditions from the topical application of the sulfonamide powders. In fact, the finger of suspicion points to this practice as a factor in necrotizing arteriolar lesions.

This note is not written to discredit the use of procaine hydrochloride intravenously in the treatment of drug reactions. I feel that this method of therapy is worthy of full consideration. However, one should not call this a serum sickness type of reaction to penicillin without ruling out the possibility of the sulfathiazole being the offender, especially in view of the high sensitizing index of sulfonamides as compared with the relatively low sensitizing index of penicillin.

LEWIS E. ABRAM, M.D., Cleveland.

PROCAINE FOR URTICARIA FROM PENICILLIN

To the Editor:—Concerning the article on the use of procaine hydrochloride in urticarial reactions from penicillin (Dressler and Dwork, THE JOURNAL, March 22), a word of caution should be offered: The effect of this medication in hives is indeed startling and probably excels in efficacy anything else recommended for urticaria. In Europe this method has also been employed on a large scale in the treatment of intractable asthma with remarkable results. It should be borne in mind, however, that sensitivity to cocaine and related drugs is not uncommon (Waldbott, G. L.: So-Called Thymic Death, *Arch. Otolaryng.* **17**:549 [April] 1933). The literature reveals many instances of fatal anaphylaxis when, during administration of local anesthesia, a vein was accidentally punctured and relatively small amounts of the anesthetic were introduced into the blood stream of patients who were sensitive to the drug. I have recently been called to see a patient who had been given approximately 0.5 Gm. of procaine hydrochloride in 250 cc. of saline solution intravenously for the relief of urticaria following the recommendation of State and Wangensteen (THE JOURNAL, April 13, 1946). She developed severe allergic shock and was saved only by the prompt action of the attending physician. Sensitization to the drug is particularly apt to develop in patients with chronic urticaria, since they are liable to have second and third injections of procaine after intervals of a few weeks in a manner similar to the one of producing anaphylaxis in animals. Preliminary skin tests for these drugs are unreliable, especially when the skin is covered with urticarial lesions.

GEORGE L. WALDBOTT, M.D., Detroit.

EFFECTS OF HEXYLRESORCINOL ON SURFACE TENSION

To the Editor:— Please permit me to correct an opinion expressed by Dr. Gilbert J. Thomas in his discussion on page 587 of the March 1 issue of THE JOURNAL. He said "Hexylresorcinol in 1:1,000 solution changed the physical properties of the urine by increasing the surface tension."

I think that if Dr. Thomas was to investigate he would find that hexylresorcinol decreases surface tension. Although the disinfectant powers of this compound have been attributed by some to its ability to reduce surface tension, it is interesting to note that some other surface tension reductants are not as germicidal as hexylresorcinol even though they may produce an equal reduction in surface tension in the concentration used. However, in a *homologous series, surface tension reducing power shows* a definite relationship to bactericidal activity. These facts suggest a specific activity of the hexylresorcinol molecule over and beyond its action on surface tension. Therefore I would say that this compound does not act merely as a physical agent, as Dr. Thomas suggested.

This subject is discussed on page 110 of "A Textbook of Bacteriology" by Zinsser and Bayne-Jones (ed. 8).

HUGH A. INNESS-BROWN JR., Vermillion, S. D.

PROLONGED REACTION TO BENADRYL

To the Editor:—THE JOURNAL has come to occupy a well deserved place as the major, if not the only, medical periodical read by the average general practitioner in this country. This places a heavy responsibility on contributors, as their procedures, technics, dosages and sometimes even minor suggestions may be adopted in toto by a practitioner too busy to investigate further. For this reason it is disturbing to us as pharmacologists to see important fundamental principles overlooked in an article published in THE JOURNAL.

In a communication entitled "Prolonged Reaction to Benadryl" by Samuel Schwartzberg and Darrell Willerson (THE JOURNAL, February 8, p. 393) the authors suggest treatment of a Benadryl reaction with intravenous histamine. This may seem a logical procedure when one thinks of Benadryl only as an antihistamine drug; but drugs, especially those with complex chemical formulas, seldom act on only one system or mechanism. It is probable that most of the toxic reactions to Benadryl involve mechanisms entirely distinct from its antihistamine activity, and injection of histamine might actually be harmful in such cases. Histamine causes dilatation and increased permeability of blood vessels—a picture closely resembling clinical shock. In a case of shocklike reaction to Benadryl such as that described in the same issue of THE JOURNAL by Drs. Geiger, Rosenfield and Hartman, injection of histamine could aggravate the condition, with a possibly fatal outcome.

It therefore seems to us that when the authors made their suggestion, which may be worthy of consideration in their case, they should have added a strong word of caution. The radical therapy proposed should certainly be used only when all provisions are made for handling untoward reactions which might follow. The use of intravenous histamine has no theoretical justification in most reactions to Benadryl.

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Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Workmen's Compensation Act: Conflict of Medical Testimony.—The petitioner filed a claim for an award under the workmen's compensation act for injuries sustained in the course of his employment with the Aluminum Company of America. An award in his favor was reversed on rehearing before the commission, so the petitioner appealed to the Supreme Court of Arizona.

In May 1943 the petitioner was struck on the left side of his back, with considerable force, by a 2 by 12 plank, causing an abrasion about 6 inches long. X-rays taken on the day of the accident disclosed no fracture, bone injury or tearing of the tendons or tissues. About a week later, however, additional x-rays showed that the petitioner had a rather old and well developed case of arthritis existing in two forms, hypertrophic and rheumatoid. Following the injury the petitioner suffered from pain, and finally, in July 1943, quit his employment because of his condition. On July 22, 1944 the compensation commission granted an award for temporary partial disability for a period not to exceed sixty months subsequent to June 20, 1944. On rehearing the commission held that the petitioner had no disability resulting from the accident after June 19, 1944 and it therefore set aside its previous award. On appeal to the Supreme Court, the sole question was whether or not the evidence was of such a character as to justify the final finding of the commission.

The parties agreed that petitioner was totally disabled because of pain resulting from rheumatoid arthritis and that at the time of the accident the petitioner was suffering from both hypertrophic and rheumatoid arthritis. The medical experts agreed that petitioner's disability as of June 1944 had no relation to the hypertrophic form of arthritis; that the infectious or rheumatoid arthritis is progressing; that the accident did not cause or bring on the rheumatoid arthritis; that hypertrophic arthritis is a chronic generally nondisabling disease or condition of the joints indicated by bony spars or spurs at the site of the attachments of tendon, fascia or ligament and usually due to continued irritation or strain; that rheumatoid arthritis, on the other hand, is "a chronic disease of the joints . . . marked by inflammatory changes in the synovial membranes and articular structures and by atrophy and rarefaction of the bones," is of an infectious character, produces inflammation, and is characterized by pain.

Some of the medical experts testified that the rheumatoid arthritis at the time of the accident was latent in character, and that the accident caused it to flare up, or that it was aggravated by the injury. They took the position that, since petitioner was not disabled by the disease at the time of the injury but became disabled shortly thereafter, the injury was the activating cause of the pain and therefore the disability was produced by the accident. Approximately an equal number of other medical experts testified, however, that, there being no tearing of ligaments, tendons or tissues or fracture of bones, the injury was not severe enough to light up or activate the existing disease. It was the position of these doctors that the disease condition of petitioner's spine on the date of the accident made it more susceptible to pain than would be a normal spine and in addition that the pain resulting from the accident might therefore continue for a longer period than if the spine were in a healthy condition. It was their theory that petitioner's condition as of June 1944 must be attributed solely to the progress of the disease itself and not in any way to the accident.

It appears, said the Supreme Court, that the different theories of the medical experts are based on what would seem to be not only admitted facts but reasonable hypotheses. Whether the rheumatoid arthritis was permanently activated by the injury is largely a medical question. It would also seem to be largely a matter for expert medical opinion when the effects of an injury to a diseased spine would subside and whether the pain and consequent disability as of a year after the accident was from the effects of the injury itself or was a result of the progress of the disease. In a prior Arizona case the rule has been established that where the determination of a question of disability must rest on expert medical testimony, and the opinions of the experts are based on supporting facts and logical theories, this is reasonable evidence for the commission's consideration. Here, pointed out the Supreme Court, the evidence is conflicting. The commission might have followed either of the theories advanced by the medical witnesses. Since the opinions of the medical experts which were apparently followed by the commission conformed to the rule of the cases mentioned, the Supreme Court concluded that it could only affirm the award. Accordingly the award in favor of the petitioner was affirmed.—*Lewis v. Industrial Commission, 173 P. (2d) 639 (Arizona, 1946).*

Pharmacists: Liability for Error in Filling Prescription.—The defendant, a licensed pharmacist, in filling a physician's prescription calling for the delivery of 21 grains of sulfathiazole, in powder form, misread the written prescription and delivered 147 grains in tablet form; and the purchaser consented to grind the tablets into powder. As a result of the defendant's error the patient for whom the drug was intended, an 8 months old infant, was given doses containing 21 grains of the drug whereas the prescription called for doses of 3 grains. After the ingestion of six doses the baby died. The defendant was indicted on two counts: (1) manslaughter in the second degree and (2) violation of section 1742 of the Penal Law prohibiting the delivery of a larger quantity of drugs than was prescribed. The trial court found the defendant guilty on both counts and the defendant appealed to the supreme court, appellate division, second department New York. The court said that the evidence established that the defendant made a mistake in reading the prescription but that it failed to establish any culpable negligence within the contemplation of the manslaughter statute. Accordingly the verdict of guilty on the first charge was set aside and the verdict of guilty on the second charge unanimously affirmed.—*People v. Greenwald, 65 N. Y. S. (2d) 193 (New York, 1946).*

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

BOARDS OF MEDICAL EXAMINERS
BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Examinations of the boards of medical examiners and boards of examiners in the basic sciences were published in The Journal, April 19, page 1239.

NATIONAL BOARD OF MEDICAL EXAMINERS

National Board of Medical Examiners: *Parts I and II.* Various centers, June 16-18. *Part III.* Various centers, June. Durham, Oct. 21-23. Sec., Mr. Everett S. Elwood, 225 S. 15th St., Philadelphia 2.

EXAMINING BOARDS IN SPECIALTIES

American Board of Anesthesiology: Part II. *Oral.* Cleveland, Oct. 5-11. Sec., Dr. P. M. Wood, 131 Riverside Dr., New York 24.

American Board of Dermatology and Syphilology: *Oral.* New York City, April 25-27. Sec., Dr. George M. Lewis, 66 E. 66th St., New York 21.

American Board of Neurological Surgery: Oral. Chicago, June 4-5. Sec., Dr. Paul C. Bucy, 912 S. Wood St., Chicago.

American Board of Obstetrics and Gynecology: *Part II.* Pittsburgh. June 1-7. Sec., Dr. Paul Titus, 1015 Highland Bldg., Pittsburgh.

American Board of Ophthalmology: Philadelphia, June 15-19. Chicago, October 6-12. Sec., Dr. S. Judd Beach, 704 Congress St., Portland, Me.

American Board of Orthopaedic Surgery: Part I. St. Louis, May 1-2. Part II. Chicago, Jan. 22-23. Final date for filing applications is Sept. 15, 1947. Sec., Col. F. M. McKeever, 1136 W. Sixth St., Los Angeles 14.

American Board of Otolaryngology: Chicago, Oct. 7-11. Sec., Dr. D. M. Lierle, University Hospitals, Iowa City, Ia.

American Board of Pediatrics: Effective May 1, application fee will be $125.

American Board of Plastic Surgery: Examinations are given in April and November of each year in the home town of applicants. Applications should be sent to Sec., Dr. Robert H. Ivy, c/o Clerical Secretary, 4647 Pershing Ave., St. Louis 8.

American Board of Psychiatry and Neurology: New York, December. Final date for filing application is Sept. 15. Sec., Dr. Francis J. Braceland, 102-110 Second Ave., S. W., Rochester, Minn.

American Board of Surgery: Final date for filing application for the next written examination is July 1. Sec., Dr. J. Stewart Rodman, 225 S. 15th St., Philadelphia.

American Board of Urology: Chicago, February. Final date for filing application is Nov. 1. Sec., Dr. Harry Culver, 1409 Willow St., Minneapolis 4.

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1937 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied with stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Journal of Hygiene, Baltimore

45:1-122 (Jan.) 1947

Epidemiology of Terminal Bronchopneumonia: I. Significance of Postmortem Cultures in Determination of Etiology of Terminal Pneumonia. W. G. Smillie and Dorothy R. Duerschner.—p. 1.

Id.: II. Selectivity of Nasopharyngeal Bacteria in Invasion of Lungs. W. G. Smillie and Dorothy R. Duerschner.—p. 13.

Salmonella Types Encountered by the 15th Medical General Laboratory. D. W. Bruner and B. J. Joyce.—p. 19.

Susceptibility of Different Species of Avian Malarial Parasites to Drugs. E. H. Dearborn and E. K. Marshall Jr.—p. 25.

Further Studies on Stability of Resistance to Common Cold: Importance of Constitution. F. Sargent II, Olive M. Lombard and Virginia W. Sargent.—p. 29.

Epidemiologic Aspects of Outbreak of Infectious Hepatitis. R. E. Trussell.—p. 33.

Effect of Four Different Therapies on Relapse Rate of Vivax Malaria. W. Trager, F. B. Bang and N. G. Hairston.—p. 43.

Isolation of Typhus Rickettsiae from Rat Mites Liponyssus Bacoti in Peiping. Wei-T'ung Liu.—p. 58.

Physiologic Factors Which Influence Infection of Aedes Aegypti with Plasmodium Gallinaceum. W. Hovanitz.—p. 67.

*Serologic and Epidemiologic Studies on Primary Atypical Pneumonia and Related Acute Upper Respiratory Disease. M. D. Eaton and W. van Herick.—p. 82.

Effect of Vaccination on Incidence of Influenza B. G. K. Hirst, A. Vilches, O. Rogers and C. L. Robbins.—p. 96.

Prolonged Storage of Human Pathogenic Protozoa with Conservation of Virulence: Observations on Storage of Helminths and Leprospiras. D. Weinman and Joan McAllister.—p. 102.

Primary Atypical Pneumonia.—On the basis of antigenic composition, host range, pathogenicity and other properties, Eaton and van Herick point out that the virus of atypical pneumonia is distinct from the viruses of influenza A and B, the viruses of the psittacosis group, the pneumonia virus of mice and the common nonbacterial infectious agents of the respiratory tracts of cotton rats and hamsters. Their results permit a more accurate evaluation of the etiologic relationship of the virus to epidemic and sporadic acute respiratory disease with or without pneumonia. Virus neutralization tests were done with paired acute phase and convalescent serums from 213 persons with various types of respiratory disease. Significant increases in titer of fourfold or greater were found in the serums of 52 of the 84 persons with primary atypical pneumonia and in the serums of 15 of the 77 with undifferentiated upper respiratory infection. As controls, 52 pairs of serum specimens from persons with respiratory diseases were also examined. Only one, the serum of a patient with type A influenza, showed a fourfold increase in neutralizing antibodies. Nearly all persons having primary atypical pneumonia with positive cold isohemagglutinations and with significant titers of agglutinins for the indifferent streptococcus number 344 also had definite increases in virus neutralizing antibodies. In four localized epidemics of acute respiratory illness associated with pneumonia occurring in 1941 and 1942 a high proportion of the cases showed positive neutralization with significant increase in titer of antibodies for the atypical pneumonia virus. Agglutination of streptococcus number 344 was found in about half the cases in the two outbreaks among civilians and in less than 10 per cent of the cases in the other two outbreaks, which were at army camps. The acute phase antibody levels in persons with atypical pneumonia or upper respiratory infection and positive virus neutralization were, on the average, lower than in those who had other respiratory diseases with negative virus neutralization.

American Journal of Medical Sciences, Philadelphia

213:1-128 (Jan.) 1947

Migrainous Personality and Constitution: Essential Features of the Disease; Study of 500 Cases. W. C. Alvarez.—p. 1.

*Fatal Infection with Poliomyelitis Virus in Laboratory Technician: Isolation of Virus from Lymph Nodes. H. A. Wenner and J. R. Paul.—p. 9.

Gynecomastia Due to Malnutrition. G. Klatskin, W. T. Salter and F. D. Humm.—p. 19.

Mild Rheumatic Reaction in Coast Guard Recruits. H. Poliakoff.—p. 37.

Blood Pressure Studies in 100 Cases of Coronary Occlusion with Myocardial Infarction. W. N. Chambers.—p. 40.

Specific Dynamic Action as Means of Augmenting Peripheral Blood Flow: Use of Aminoacetic Acid. R. Gubner, J. R. Di Palma and Elizabeth Moore.—p. 46.

Evaluation of Immune Serum Globulin as Prophylactic Agent Against Homologous Serum Hepatitis. G. G. Duncan, H. A. Christian, J. Stokes Jr., W. F. Rexer, J. T. Nicholson and A. Edgar.—p. 53.

Pathology of Experimental Frostbite. N. B. Friedman, K. Lange and D. Weiner.—p. 61.

Use of Posterior Pituitary Extract (Pituitrin) to Measure Renal Function. S. F. Horne and L. M. Morris.—p. 68.

Thiouracil in Thyrotoxicosis: Results of Prolonged Treatment in 35 Cases. E. Rose and Jeannette McConnell.—p. 74.

Relationship of Bromsulphalein Retention to Fever of Natural P. Falciparum Malaria. T. E. Machella, with technical assistance of R. Fine and D. Burgoon.—p. 81.

Rheumatoid Arthritis. A. D. Wallis.—p. 87.

Diagnosis of Pulmonary Disease. L. L. Friedman.—p. 97.

Personality Repercussions of Anterior Poliomyelitis: Review of Literature. C. E. Stanfield.—p. 109.

Psychosomatic Relationships in Acute Anterior Poliomyelitis. F. G. Ebaugh and C. S. Hoekstra.—p. 115.

Fatal Infection with Poliomyelitis Virus in Laboratory.—Wenner and Paul report a fatal case of poliomyelitis which occurred in a laboratory worker. It is probable, although not definite, that this man acquired his infection as a result of exposure to poliomyelitis virus in the laboratory. Prior to his infection he was working with human infectious material and with strains of poliomyelitis virus in their early monkey passage. Poliomyelitis virus was isolated from the throat (during life) and at necropsy from the central nervous system, the washed wall of the duodenum, mesenteric lymph nodes and some of the right axillary lymph nodes. Just prior to his illness he sustained an injury to his skin on the right wrist.

American Journal of Medicine, New York

2:1-130 (Jan.) 1947

*Penicillin Therapy of Scarlet Fever and Streptococcus Carrier. R. Jennings and E. D. DeLamater.—p. 1.

Transfer of Beta Hemolytic Streptococci by Shaking Hands. M. Hamburger Jr.—p. 23.

*Clinical and Pathologic Findings in Cases of Truncus Arteriosus in Infancy. Helen B. Taussig.—p. 26.

Influenza: Preliminary Statewide Survey Using Routine Blood Specimens. G. Dalldorf and Christine E. Rice.—p. 35.

Rheumatoid Arthritis: Diagnostic Significance of Focal Cellular Accumulations in Skeletal Muscles. G. K. DeForest, H. Bunting and W. E. Kenney.—p. 40.

Diagnosis of Guillain-Barré's Disease. J. R. Brown and A. B. Baker.—p. 45.

Agranulocytosis Caused by Thiouracil: Review of 59 Cases in Literature and Report of 2 Additional Cases. J. H. Morton.—p. 53.

Penicillin Therapy of Scarlet Fever and Streptococcus Carrier.—Jennings and DeLamater present an extensive bacteriologic and clinical study of an epidemic of streptococcic disease, including scarlet fever, which was caused by a sulfadiazine-resistant strain of group A, type 17, hemolytic streptococcus. The epidemic occurred in young men of military age. A comparison of the complication rates shows complete parallelism with the relative severity of each clinical entity, the rate being highest for scarlet fever and lowest for "nasopharyngitis." Comparison of the clinical response to penicillin and sulfadiazine shows sulfadiazine to be ineffective and penicillin to be dramatic in its relief of symptoms.

Truncus Arteriosus in Infancy.—Of 2 infants with truncus arteriosus, 1 had bronchial arteries and showed intense cyanosis; the other, whose arteries arose directly from the aorta, did not have cyanosis. In both infants the contour of the heart in the left anterior oblique position was identical. In each infant the right ventricle extended out abruptly from the aorta to the anterior chest wall as a shelf. At necropsy the structures of the ventricles and their relation to the truncus arteriosus were found to be identical. Therefore Taussig believes that this contour is characteristic of a truncus arteriosus in infancy in which the ventricles are normally formed and in which the aorta overrides the ventricular septum and receives blood from both ventricles.

American Journal of Physiology, Baltimore

148:1-258 (Jan.) 1947. Partial Index

Measurement of Stroke Volume from Pressure Pulse. W. F. Hamilton and J. W. Remington.—p. 14.
Quantitative Calculation of Time Course of Cardiac Ejection from Pressure Pulse. J. W. Remington and W. F. Hamilton.—p. 25.
*Comparison of Nutritive Value of Fats When Fed Alone or When Fed with Sucrose or Lactose. B. H. Ershoff and H. J. Deuel Jr.—p. 45..
*Thiamine Deficiency and Specific Dynamic Effect of Diet High in Carbohydrate. G. C. Ring.—p. 51.
Renal Regulation of Water and Some Electrolytes in Man, with Special Reference to Their Relative Retention and Excretion. A. V. Wolf.—p. 54.
Mechanism of Prolonged Fluorescein Circulation Time in Experimental Traumatic Shock. S. C. Wang, E. E. Painter and R. R. Overman.—p. 69.
Relation of Maternal Blood Flow within Uterus to Change in Shape and Size of Conceptus During Pregnancy: Physiologic Basis of Uterine Accommodation. S. R. M. Reynolds.—p. 77.
Long Term Acclimatization to Heat. W. R. Christensen.—p. 86.
Peripheral Motion Acuity of 50 Subjects. F. N. Low.—p. 124.
*Effect of Blood Carboxyhemoglobin Concentration on Hypoxia Tolerance. G. C. Pitts and N. Pace.—p. 139.
Increase in Hypoxia Tolerance of Normal Men Accompanying Polycythemia Induced by Transfusion of Erythrocytes. N. Pace, E. L. Lozner, W. V. Consolazio, G. C. Pitts and L. J. Pecora.—p. 152.
Effects of Asphyxiation and Narcosis on Peripheral Nerve Polarization and Conduction. E. B. Wright.—p. 174.
Influence of Age on Hemoconcentrating Responses of the Dog. H. E. Ederstrom and B. DeBoer.—p. 193.
Quantitative Relationship Between Calcium and Prothrombin. A. J. Quick.—p. 211.
Pancreatic Juice is a Rich Source of Anti-Fatty Liver Factor. M. L. Montgomery, C. Entenman and I. L. Chaikoff.—p. 239.
Influence of Liver on Shock Produced by Extracts of Certain Parasites. A. Grana, F. C. Mann and H. E. Essex.—p. 243.
Effect of Explosive Decompression on Cerebrospinal Fluid Pressure. W. V. Whitehorn, A. Lein, A. Edelmann and F. A. Hitchcock.—p. 253.

Nutritive Value of Fats with Sucrose or Lactose.—Ershoff and Deuel report observations on male and female rats which were fed diets containing 70 per cent sugar (lactose or sucrose) and 30 per cent fat (butter fat, margarine fat, corn oil or cottonseed oil). When lactose was the dietary carbohydrate, survival was significantly longer on rations containing margarine fat or butter fat than on diets containing corn oil or cottonseed oil. With sucrose as the dietary carbohydrate, no significant differences in length of survival were observed. Male and female rats were fed diets consisting of a single fat. With female rats of the U. S. C. strain, length of survival was longest with butter fat as compared with lard, olive oil, corn oil, margarine fat, soybean oil, wheat germ oil and cottonseed oil groups. With females of the Sprague-Dawley strain, results on butter were significantly better than with margarine fat, corn oil or cottonseed oil. Significant differences in length of survival were not observed in male rats fed these fats. Periods of survival of male rats on sugar-fat mixtures as well as on exclusive fat diets were longer than those of female rats.

Thiamine Deficiency and Diet High in Carbohydrate.—Ring says that the specific dynamic action of a diet high in carbohydrate and containing adequate thiamine is about twice as large as that of a similar diet without thiamine. He found that 1 mg. of thiamine added to a kilogram of this diet did not produce as large a specific dynamic action as 2 or more milligrams.

Blood Carboxyhemoglobin Concentration and Hypoxia.—According to Pitts and Pace the carbon monoxide concentrations which obtain in some aircraft may lead to concentrations of at least 12 per cent carboxyhemoglobin in the pilot's blood under operating conditions. For military reasons a study was initiated on the effects of such blood carboxyhemoglobin concentrations at intermediate altitudes where airborne personnel do not ordinarily use oxygen breathing equipment but, nevertheless, suffer reduced arterial oxygen saturations. Studies were made on a group of 10 normal men. On the basis of the changes in pulse rate it was possible to derive a quantitative estimate of the effect of blood carboxyhemoglobin on hypoxia tolerance. The increment in response to 1 per cent increase in blood carboxyhemoglobin was equal to that obtained by raising a normal group 335 feet in pressure altitude. This value was determined for the altitude range of 7,000 to 10,000 feet and for increases in blood carboxyhemoglobin of at least 13 per cent.

American Journal of Public Health, New York

37:1-138 (Jan.) 1947. Partial Index

Foreign and Domestic Trends in Diphtheria. G. W. Anderson.—p. 1.
*Rhus Dermatitis as Public Health and Health Education Problem. C. E. Turner.—p. 7.
*Present Status of Control of Air Borne Infections. J. E. Perkins and others.—p. 13.
Merit System Administration in Official Health Agencies. J. W. Mountin, Bess A. Cheney and D. F. Simpson.—p. 23.
Achievements of UNRRA as International Health Organization. W. A. Sawyer.—p. 41.
Report of Chairman of Executive Board of American Public Health Association to Governing Council 1945-1946. A. Wolman.—p. 59.

Rhus Dermatitis.—Turner says that preventive hygiene and attempted desensitization have not proved effective in preventing rhus dermatitis. The effectiveness of two new chemical herbicides, ammonium sulfamate and 2-4 dichlorophenoxyacetic acid, which have just come into use, provide the first really promising solution of this public health problem. Health department leadership and the cooperative efforts of community agencies can reduce the now prevalent dermatitis to a relatively rare illness.

Control of Air Borne Infection.—The Subcommittee for the Evaluation of Method of Control of Air Borne Infections has summarized its group judgment on the control of air borne infections. The oiling of floors, blankets and bedding has now developed to the point of practical application in the suppression of dust. Such measures reduce bacterial contamination of the air, but there is as yet insufficient evidence that they prevent disease. Dust suppression should be applied wherever practicable in conjunction with ventilation, ultraviolet irradiation and disinfectant vapors. The available evidence strongly indicates that methods of air disinfection (ventilation, ultraviolet irradiation and glycol vapors) are useful adjuvants to aseptic technics in the reduction or elimination of air borne infections in operating rooms and in contagious disease and pediatric wards. It is not yet possible to compare the relative efficiency of ultraviolet irradiation and glycol vapors. The general use of ultraviolet irradiation or disinfectant vapors in schools, barracks and specialized industrial environments is not justified at the present time. There is no justification for the indiscriminate use of ultraviolet light or other methods for disinfecting air in homes, offices or places of public congregation.

Am. J. Roentgenol. & Rad. Therapy, Springfield, Ill.

57:1-144 (Jan.) 1947

Motor Dysfunction of Biliary Tract: Analytical and Critical Consideration. A. C. Ivy.—p. 1.
*Simple Spontaneous Pneumothorax in Apparently Healthy Individuals: Report of 24 Cases. R. F. Niehaus.—p. 12.
Boeck's Sarcoid (Sarcoidosis). A. Oppenheim and R. S. Pollack.—p. 28.
Pattern Types in Small Intestine. S. M. Friedman.—p. 36.
Peritoneopericardial Diaphragmatic Hernia: Report of Case in Newborn Infant Successfully Corrected by Surgical Operation, with Recovery of Patient. A. K. Wilson, W. R. Rumel and O. L. Ross.—p. 42.
Unusual Venous Returns of Lower Extremities. E. C. Baker.—p. 50.
Osteochondritis Dissecans: Analysis of 42 Cases and Review of the Literature. G. Lavner.—p. 56.
Fractures of Femoral Neck Following Pelvic Irradiation. W. P. Stampfli and H. D. Kerr.—p. 71.
Dysgerminoma of Ovary: Review of 11 Cases of Proved Tumor, with Special Reference to Radiosensitivity. R. D. Moreton and A. U. Desjardins.—p. 84.
*Quantitative Determination of Radium Content of Human Body and of Radon Content of Breath Samples of Prevention and Control of Radium Poisoning in Persons Employed in Radium Industry. V. F. Hess and W. T. McNiff.—p. 91.
Fundamental Principles in Application of Cineroentgenography as Auxiliary Method to Roentgen Diagnosis. J. Moretzsohn de Castro.—p. 103.

Simple Spontaneous Pneumothorax.—A history of physical exertion preceded the onset of spontaneous pneumothorax of only 7 of 24 patients with spontaneous pneumothorax. In 2 instances it followed the throwing of a baseball and snowball respectively and in 3 instances spontaneous pneumothorax followed exertion while in an awkward position. In the uncomplicated cases the acute symptoms usually subsided in a few days, and the time for complete reexpansion of the affected lung varied from one to eight weeks. Nine patients experienced a recurrent pneumothorax. The present day treatment of recurrent spontaneous pneumothorax is either by the production of a chemical pleuritis or by surgical intervention.

Determination of Radium Content of Human Body to Prevent Radium Poisoning. — An integrating gamma ray method was worked out which allows for determining quantities of radium of the order of 0.1 microgram in the body with a fair degree of accuracy within one hour. Amounts of only 0.03 microgram can be estimated within plus or minus 0.01 microgram. Thus, it is possible to detect incipient radium poisoning before the tolerance limit (set at present as 0.1 microgram) is acquired. The double chamber differential method of determining the radon content of expired air samples from persons employed in the radium industry was improved and simplified for routine work.

American Journal of Tropical Medicine, Baltimore

27:1-78 (Jan.) 1947. **Partial Index**

Tropical Medicine and Challenge of Global War. J. S. Simmons.—p. 1.
Distribution of Exoerythrocytic Parasites and Tissue Reaction Caused by Blood Induced Plasmodium Gallinaceum Infection in Chicks. J. L. Tullis.—p. 21.
Studies on Atabrine (Quinacrine) Suppression of Malaria: III. Epidemiologic Significance of Atabrine Suppression. F. B. Bang and N. G. Hairston.—p. 31.
Transmission of Plasmodium Malariae by Anopheles Maculipennis Freeborni. M. D. Young and R. W. Burgess.—p. 39.
Diagnosis of Schistosoma Mansoni Infections: Note on Use of Rectal Scraper. T. H. Weller.—p. 41.
Results of Certain Studies on Stomach in Schistosomiasis Japonica. E. D. Palmer.—p. 45.
Intradermal and Complement Fixation Reactions Elicited by Various Antigens in Persons Infected with Onchocerca Volvulus. J. Bozicevich, A. Donovan, L. Mazzotti, F. Diaz A. and E. Padilla.—p. 51.
Intestinal Parasitic Infections in Naval Personnel. E. K. Markell, P. E. Mullinger and D. J. Schneider.—p. 63.
*DDT Dust for Control of Head Lice. F. A. Cowan, T. McGregor and N. M. Randolph.—p. 67.
Treatment of Carrion's Disease with Large Transfusions. C. H. Hodgson.—p. 69.
Evaluation of Surgical Treatment of Recurrent Echinococcic Cysts of Liver Followed by Deep X-Ray Therapy. G. M. Dorrance and J. W. Bransfield.—p. 77.

DDT for Control of Head Lice.—Cowan and his associates say that many requests from school officials and civic organizations were made to the Texas State Department of Health concerning head louse control. Arrangements were made to treat some of the children enrolled in certain schools. The majority of these children were members of large families and lived under crowded conditions. Only volunteers were used, since some children refused treatment. No child having skin abrasions or sores on the scalp was dusted. A dust composed of 10 per cent DDT and 90 per cent pyrophyllite was the insecticide used. The amount of dust applied varied from 2.5 to 5 Gm., the larger quantity being used on girls with long hair. After application of the dust the child was instructed not to wash the hair for one week. At the end of two weeks a second application of dust was made, and a second examination was made to determine the effects of the insecticide on the infestation. A third examination was made at the end of four weeks. At this time only 1 of the 173 treated children had lice, and this child admitted having washed his hair the day after the treatment.

American Practitioner, Philadelphia

1:227-284 (Jan.) 1947

Artificial Insemination: Its Medicolegal Implications, A Symposium: Medical Aspects. J. P. Greenhill.—p. 227.
Legal Aspects. J. F. Wright.—p. 231.
Diagnosis and Treatment of Cancer of Uterus. H. D. Kerr.—p. 242.
Differential Diagnosis of Aortic Stenosis, Pulmonary Stenosis, Patent Ductus Arteriosus and Coarctation of Aorta. W. J. Kerr.—p. 247.
Peripheral Vascular Sclerosis. G. de Takats and E. F. Fowler.—p. 251.
Management of Vivax Malaria in Veteran.—H. Most.—p. 258.
Diagnosis and Management of Peripheral Nerve Injuries. R. A. Groft. —p. 265.
Clinical Physiology of Infectious Diseases of Liver. G. E. Wakerlin. —p. 269.
Maintaining Nitrogen Balance with Amino Acids: Four Adults Maintained by Acid Hydrolyzed Casein Fortified with One per Cent dl-Tryptophan Given Orally. M. L. Soenke, M. G. Horning and E. H. Watson.—p. 276.

Anesthesiology, New York

8:1-112 (Jan.) 1947

Lack of Cerebral Effects of d-Tubocurarine. S. M. Smith, H. O. Brown, J. E. P. Toman and L. S. Goodman.—p. 1.
Immediate Decrease in Blood Pressure Seen at Conclusion of Cyclopropane Anesthesia: "Cyclopropane Shock." R. D. Dripps with technical assistance of Patricia K. Walker.—p. 15.
Anesthesia for Thoracic Surgery: Management in Army General Hospital Overseas. C. L. Burstein and F. A. Duncan Alexander.—p. 36.
Anesthesia: XXIII. The Anesthetic Properties of Three Isomeric Ethers. C. J. Carr, D. B. Farson and J. C. Krantz Jr.—p. 53.
New Endotracheal Instruments. R. D. Sanders.—p. 57.
Problems of Training in and Practice of Anesthesiology in European Theater of Operations. R. M. Tovell.—p. 62.
Pentothal-Curare Mixture. J. W. Baird.—p. 75.
Observations on Literature on Anesthesia. Florence A. McQuillen. —p. 80.

Archives of Dermatology and Syphilology, Chicago

55:1-154 (Jan.) 1947

Progressive Scleroderma of Skin with Cystic Sclerodermal Changes of Lungs. A. Dostrovsky.—p. 1.
Unusual Dermatosis Simulating Lichen Planus and Lichen Corneus Hypertrophicus: Report of 6 Cases. L. M. Nelson.—p. 12.
Ichthyosiform Changes of Skin Associated with Internal Diseases. A. J. Glazebrook and W. Tomaszewski.—p. 28.
Ocular Pemphigus with Scarring of Skin and Mucous Membranes. B. Kanee.—p. 37.
Lipoidosis Cutis et Mucosae: Report of Case. H. Price, W. V. LaRosa and E. B. Settle.—p. 42.
*Topical Treatment with Penicillin Ointment. C. S. Wright and E. R. Gross.—p. 52.
*Agranulocytosis: Report of 12 Cases in Which It Followed Intensive Arsenotherapy for Syphilis. S. Fisher, H. L. Holley and G. Fein. —p. 57.
Tinea Nigra. J. Aroeira Neves and O. G. Costa.—p. 67.
Chronic Latent Oral Moniliasis (Thrush): Report of Case of Twelve Years' Duration in Which Disease was Resistant to Treatment. S. S. Robinson and S. Tasker.—p. 85.
Epidermolysis Bullosa: Recently Described Variant. W. Sachs, A. B. Hyman and Margaret B. Gray.—p. 91.
Benadryl in Dermatologic Therapy. F. W. Lynch.—p. 101.

Topical Treatment with Penicillin Ointment.—Wright and Gross treated a variety of superficial dermatoses with penicillin locally in the form of an ointment consisting of 1,000 Oxford units of calcium penicillin per gram in a base of hydrous wool fat and white petrolatum. Patients were instructed to apply the ointment liberally three to four times daily on the infected areas, and in other instances dressings were employed, which were changed twice daily. All patients were advised to keep the ointment continually refrigerated. Twenty-one of 25 patients with impetigo contagiosa were entirely cured within three days. Only 2 of 23 patients with intertriginous dermatitis of the ears responded to topically applied penicillin ointment. Treatment with penicillin ointment failed completely in infectious eczematoid dermatitis, acne vulgaris, monilia, sycosis vulgaris and in patients with varicose, phagedemic, pyogenic and x-ray ulcers. There was an improvement in the condition of 6 patients with furunculosis and 2 patients with carbunculosis, but no cures were effected in this group. Eight patients with ecthyma responded dramatically to treatment, but negative results were obtained in molluscum contagiosum, dermatophytosis and seborrheic dermatitis. The author concludes that penicillin ointment is of value chiefly in the treatment of impetigo contagiosa and ecthyma.

Agranulocytosis Following Intensive Arsenotherapy for Syphilis.—Fisher and his associates report 11 cases in which agranulocytosis occurred during intensive arsenotherapy for syphilis. One case is reported in which this complication occurred in the course of routine orthodox weekly injections of neoarsphenamine. Fifty per cent of the patients had received no previous therapy for syphilis. The reaction occurred in all cases toward the end of the scheduled course of treatment. Immediate cessation of the administration of arsenicals followed, and therapy with dimercaprol, pentnucleotide and liver extract and, in the more severe cases, blood transfusions were instituted. There were no deaths. The cases reported emphasize the importance of a close survey of all patients receiving arsenicals, with particular observation of the temperature and with routine blood counts.

Archives of Neurology and Psychiatry, Chicago

57:1-136 (Jan.) 1947

*Results of Treatment of Multiple Sclerosis with Dicoumarin. T. J. Putnam, L. V. Chiavacci, H. Hoff and H. G. Weitzen.—p. 1.
Cerebral Blast Syndrome in Combat Soldiers. H. D. Fabing.—p. 14.
*Mechanism of Motion Sickness. G. Morton, A. Cipriani and D. McEachern.—p. 58.
Electroencephalogram and Personality Organization in Obsessive Compulsive Reactions. F. V. Rockwell and D. J. Simons.—p. 71.
Effects of Pitressin Hydration on Electroencephalogram: Paroxysmal Slow Activity in Nonepileptic Patients with Previous Drug Addiction. A. Wikler.—p. 78.
Objective Method for Distinguishing Sleep from Hypnotic Trance. J. B. Dynes.—p. 84.
Circulation of Brain and Face: Determinations of Oxygen and Sugar in Arterial and in Internal and External Jugular Venous Blood. J. Loman and A. Myerson.—p. 94.
Abnormally Large Birth Weights of Psychiatric Patients. H. Barry Jr. —p. 98.

Dicumarol in Multiple Sclerosis.—Putnam and his associates review evidence that sclerotic plaques arise as a result of venular thrombosis. Since Dicumarol (3-3'-methylene-bis-[4-hydroxycoumarin]) seemed to furnish a possible solution for this problem, its administration to patients with multiple sclerosis was begun soon after it became available. It has been administered to a total of 74 patients for periods up to forty-seven months. Patients treated less than six months and those who did not cooperate satisfactorily are disregarded as subjects for study. This leaves 43 for further analysis. Doses of Dicumarol sufficient to raise the prothrombin time to thirty seconds continuously were administered, with constant laboratory control. Twenty-five patients with a remittent form of the disease were adequately treated without interruption. In this group no fresh symptoms or obvious acute outbreaks occurred. Most of the 16 patients with chronic progressive disease continued in their downward course. The treatment of 2 patients was interrupted; they were free from new symptoms while taking treatment, but both had acute relapses when it was discontinued. In 2 patients large doses of Dicumarol failed to produce the expected increase in prothrombin time, and relapses occurred.

Mechanism of Motion Sickness.—Morton and his associates give a summary of studies on the mechanism of motion sickness, which was produced in human subjects by means of a machine designed to reproduce the movements of a ship at sea. Simple pendulum swings were also effective, although some persons susceptible to one motion did not succumb to the other. Vertical acceleration and deceleration in the long axis of the body with head erect appeared to be the most important element in the production of motion sickness. An increase in the frequency of oscillation resulted in a higher incidence of sickness within the limits of the experiment. There was a definite correlation between history of motion sickness and susceptibility on the machines. Electrocardiographic studies, determinations of sugar, phosphorus and other bases in the blood, studies of gases in the arterial blood and so on revealed no significant changes in connection with motion sickness. It is probable that the most important factor in motion sickness in man is stimulation of the utricles by linear accelerations in the vertical plane of the head.

Archives of Ophthalmology, Chicago

37:1-120 (Jan.) 1947

Ocular Surgery: Random Observations. C. S. O'Brien.—p. 1.
Malignant Melanoma of Limbus and Spontaneous Cyst of Pigmented Layer of Iris in Same Sector: Contribution to Histogenesis of Tumors. A. Loewenstein and J. Foster.—p. 8.
*Atrophy of Optic Nerve Following Hemorrhage. P. Levatin.—p. 18.
Treatment of Lewisite Burns of Eye with Dimercaprol ("BAL"). W. F. Hughes Jr.—p. 25.
*Ocular Changes in Blood Dyscrasias. I. S. Tassman.—p. 42.
Ocular Sporotrichosis: Report of Case. D. M. Gordon.—p. 56.
Positive Contact Ball and Ring Implant for Use After Enucleation. N. L. Cutler.—p. 73.

Atrophy of Optic Nerve After Hemorrhage.—A man aged 34, during a massive hemorrhage from a duodenal ulcer, experienced partial atrophy of the optic nerve in one eye, with later development in the other eye. Repeated determinations of the blood count and the blood pressure revealed a persistent peripheral circulatory failure and such an extreme acute anemia that Levatin considers ischemia the chief etiologic factor.

Ocular Changes in Blood Dyscrasias.—The ocular changes occurring in the blood dyscrasias involve principally the optic disk, retinal vessels and retina in the form of edema, hemorrhages and venous distention. The degree of anemia generally determines the type and extent of the ocular involvement. Exophthalmos is the prominent ocular manifestation in diseases in which the abnormal process occurs in the orbit or involves the bones of the orbit. Tassman describes a case of erythrocytosis with ocular changes which was probably toxic in origin and was of temporary duration. A case of hyperchromic anemia (pernicious anemia) with ocular changes is presented. Four cases of leukemia with ocular changes are summarized. A case of Banti's syndrome with profound anemia and changes in the retinas and both optic nerves is reported.

Arkansas Medical Society Journal, Fort Smith

43:187-208 (Jan.) 1947

Etiology of Essential Hypertension. R. S. Faircloth.—p. 187.
The Field Army and the Profession. G. B. Larson.—p. 191.

43:209-228 (Feb.) 1947

Management of Surgical Lesion of Rectosigmoid. L. P. Good.—p. 209.
Diagnostic Aspects of Ruptured Intervertebral Disks. R. Watson and J. F. Shuffield.—p. 212.

Blood, New York

2:1-110 (Jan.) 1947

Statistical Study of Mortality from Leukemia. M. S. Sacks and I. Seeman.—p. 1.
Treatment of Lymphoblastic Leukemia with Crude Myelokentric Acid. F. R. Miller, P. A. Herbut and H. W. Jones.—p. 15.
Blood Platelets: Rate of Their Utilization in Cat. J. S. Lawrence and W. N. Valentine.—p. 40.
*Folic Acid in Treatment of Pernicious Anemia. L. M. Meyer.—p. 50.
*Hookworm Anemia (Aplastic Anemia in Hookworm Disease). E. Stransky and Florencio N. Quintos.—p. 63.
Observations on Effect of Irradiation in Chronic Acquired Hemolytic Anemia Exhibiting Hemolytic Activity for Transfused Erythrocytes. R. S. Evans and R. T. Duane.—p. 72.
*Congenital Hypoplastic Anemia Associated with Multiple Developmental Defects (Fanconi Syndrome): Report of Case. S. Estren, J. F. Suess and W. Dameshek.—p. 85.

Folic Acid in Pernicious Anemia.—Folic acid in daily doses of 15 to 50 mg. orally or 20 mg. intramuscularly usually produced a submaximal reticulocytosis in patients with pernicious anemia. In 3 patients the hemoglobin and red cells rose to a level of about 12 Gm. and 4.3 million respectively without further rise after three months of therapy. Folic acid in these doses failed to prevent the development or progression of neurologic symptoms indicative of subacute combined sclerosis. In 5 patients folic acid in doses of 5 or 10 mg. orally daily combined with ½ unit of liver extract injected intramuscularly daily produced a reticulocytosis greater than that anticipated from adequate liver extract therapy alone. With combined liver extract and folic acid therapy there was evidence of improvement in the symptoms and signs of subacute combined sclerosis in 3 patients. Folic acid combined with ½ unit of liver extract was found to produce a complete hematologic remission.

Hookworm Anemia.—According to Stransky and Quintos ancylostomiasis is widespread in the Philippines. Their cases were observed in the medical and pediatric wards of the Philippine General Hospital in Manila. They found three types or stages of blood changes. The third of these is an irreversible type, an aplastic anemia. The pathogenesis is obscure, but the authors believe that it is due to bone marrow exhaustion following continuous blood loss in the presence of various factors, including dietary deficiency. The symptomatology and the hematologic and bone marrow findings are described.

Congenital Hypoplastic Anemia Associated with Developmental Defects.—Estren and his associates describe an example of Fanconi's syndrome in a girl aged 11. They believe that this is the first case of this type reported in the American literature. Hypoplastic anemia was associated with pigmentation of the skin, deafness, congenital heart disease and congenital deformities of the thumbs and forearms. There was no response to liver and iron therapy. Three transfusions of blood totaling 700 cc. were given and had little effect. Because the patient was going progressively downhill, and because splenectomy has occasionally given beneficial effects in hypoplastic anemia, removal of the spleen was undertaken. The patient's convalescence was uneventful. One month postoperatively there were no essential changes in the neutrophil or platelet counts. It seemed that the patient was able to maintain a higher level of erythrocyte count than before the splenectomy. In view of the absence of a history of a similar disorder in either parent or their families, the case must be regarded as a genetic sport due to chance aberration in one or more of the hereditary genes.

Bulletin New York Academy of Medicine, New York

23:1-56 (Jan.) 1947

Tumors of Thyroid. S. Warren.—p. 5.
Tumors of Female Genital Tract. R. W. Te Linde.—p. 10.
Tumors of Breast. G. W. Taylor.—p. 20.
Recent Observations on Dynamics of Pulmonary Circulation. A. Cournand.—p. 27.
Curare and Intensive Physical Therapy in Treatment of Acute Anterior Poliomyelitis. N. S. Ransohoff.—p. 51.

California Medicine, San Francisco

66:1-56 (Jan.) 1947

Most Unphysiologic Period of Life. E. B. Shaw.—p. 1.
Typhus Fever in Second World War. J. C. Snyder.—p. 3.
Immediate Management of Amputations of Hands, Feet and Digits. G. B. O'Connor.—p. 11.
Primary Treatment of Open Wounds of Hand. J. E. Kirkpatrick.—p. 15.
Infection of Hand, with Evolution of Chemotherapy. J. H. Boyes.—p. 18.
Amputations of Hand and Fingers. V. P. Thompson.—p. 20.
Joints of Hand and Fingers—Their Stiffness, Splinting and Surgery. D. R. Pratt.—p. 22.
Use of Blanchard Mechanotherapist in Treating Postoperative Atelectasis. O. L. Huddleston.—p. 25.
Fatal Myocarditis with Complete Heart Block from Diphtheria. R. A. Kocher.—p. 27.
Medical Progress: Recent Progress in Pediatrics. P. Cohen.—p. 30.

Cancer Research, Baltimore

7:1-64 (Jan.) 1947

Desoxyribose Nucleic Acid from Isolated Chromosome Threads in Experimental Epidermal Methylcholanthrene Carcinogenesis in Mice. A. R. Gopal-Ayengar and E. V. Cowdry.—p. 1.
Succinic Dehydrogenase and Cytochrome Osidase in Epidermal Carcinogenesis Induced by Methylcholanthrene in Mice. C. Carruthers and V. Suntzeft.—p. 9.
Growth of Avian Tumors Other than Rous Sarcoma in Anterior Chamber of Guinea Pig Eye. E. W. Shrigley, H. S. N. Greene and F. Duran-Reynals.—p. 15.
Reciprocal Effects of Natural Immune Bodies from Chickens and Ducks on Variants of Sarcoma Virus. F. Duran-Reynals and J. W. King.—p. 21.
Production of Sarcoma with Wheat Germ Oil. P. N. Harris.—p. 26.
Production of Sarcoma in Rats with Light Green SF. P. N. Harris.—p. 35.

Gastroenterology, Baltimore

7:599-730 (Dec.) 1946

*Effect of Transthoracic Vagotomy on Clinical Course of Patients with Peptic Ulcer. J. M. Ruffin, K. S. Grimson and R. C. Smith.—p. 599.
*Insulin Test for Presence of Intact Nerve Fibers After Vagal Operations for Peptic Ulcer. F. Hollander.—p. 607.
*Effectiveness of Parenterally Administered "Enterogastrone" in Prophylaxis of Recurrences of Experimental and Clinical Peptic Ulcer, with Summary of 58 Cases. H. Greengard, A. J. Atkinson, M. I. Grossman and A. C. Ivy.—p. 625.
Intestinal Parasites in Service Personnel in South Pacific, with Special Reference to Incidence and Treatment of Strongyloidiasis. J. H. Willard.—p. 650.
Surgery in Acute Pancreatitis. R. Elman.—p. 656.
Etiology of Cholecystitis. M. E. Rehfuss.—p. 665.

Transthoracic Vagotomy and Peptic Ulcer.—This report by Ruffin and his associates is based on a study of 30 patients at Duke Hospital who have had a transthoracic vagotomy for peptic ulcer. Each patient had a chronic or recurrent ulcer which had failed to respond to previous medical or surgical treatment. One or more operations had been performed on 15 patients. The duration of ulcer symptoms ranged from three to thirty-five years. Since vagotomy, every patient has been relieved of ulcer symptoms and has been able to consume an unrestricted diet without ill effect. The pain was completely relieved immediately after vagotomy. The most constant effect of vagotomy is the reduction or absence of gastric motility. In patients who have had a previous gastroenterostomy, retention and dilatation of the stomach are likely to occur. Decrease in volume and acidity of the gastric secretions usually follow vagotomy. The relief of pain following vagotomy probably is the result of decreased motility rather than a lowering of gastric acidity. The time interval is too short to draw conclusions as to the lasting value of the procedure.

Insulin Test for Intact Nerve Fibers After Vagotomy.—Hollander describes a physiologic test for the presence of uncut vagus nerve fibers in ulcer patients following interruption of vagal stimuli to the stomach. The test is based on the production of a hypoglycemia of 50 mg. per hundred cubic centimeters or lower. Fifteen units of insulin is administered intravenously, and the production of hypoglycemia must always be proved by blood sugar determinations. A fractional gastric analysis is performed to determine whether the resulting vagal stimuli, set up centrally, are able to evoke any secretory response from the stomach. The validity of this procedure is supported by studies on gastric pouch dogs and on patients. A positive response to the insulin test—consisting of a distinct rise in the curve for free acidity of the gastric aspirates, accompanying the production of an adequate hypoglycemia—indicates that some uncut parasympathetic fibers still connect the vagus center in the medulla with the stomach. A negative response is suggestive but not necessarily conclusive proof that all the vagal fibers which pass to the stomach have been interrrupted.

Effectiveness of Enterogastrone in Peptic Ulcer.—Greengard and his associates describe a method for the preparation of an enterogastrone concentrate of uniform potency and suitable for parenteral injection in human subjects. Therapeutic trial on 43 Mann-Williamson dogs and on 58 patients with proved peptic ulcer has demonstrated that the material is probably effective in preventing recurrences during the period of its administration and for an undetermined length of time thereafter. The protection afforded cannot be explained on the basis of the action of enterogastrone in inhibiting gastric secretion, and the true nature of the agent concerned cannot be defined at present.

Illinois Medical Journal, Chicago

90:301-346 (Dec.) 1946

Management of Acute Craniocerebral Trauma. R. Meyers.—p. 310.
Analysis of Hernias and Inguinal Pathology in Young Army Personnel. L. W. Mason.—p. 327.
Arrest of Acute Hemolytic Streptococcal Endocarditis with Penicillin Therapy. H. A. Warren.—p. 331.
Hypertension and Veratrum Viride: Preliminary Study. W. K. Hite.—p. 337.

91:1-60 (Jan.) 1947

Bronchoscopy as Aid in Diagnosis of Pulmonary Disease. P. H. Holinger and A. H. Andrews Jr.—p. 12.
Progress in Neurology and Psychiatry. H. H. Reese.—p. 16.
Treatment of Acute Rheumatic Fever in Young Adults. H. A. Warren.—p. 24.
Acute Cryptogenic Cyanosis in Early Infancy: Clinical Report of Unique Syndrome of Infectious (?) Origin. S. J. Wilkinson.—p. 29.
Endocrinology in Military Service. L. B. Shpiner.—p. 35.
Essentials of Genius. E. Bunta.—p. 40.
Congenital Abnormalities of Mental Patients. H. Stanka.—p. 46.

Industrial Medicine, Chicago

16:1-44 (Jan.) 1947

*Protective Effect of Vaccination Against Epidemic Influenza B in Industrial Plant. W. D. Norwood and R. R. Sachs.—p. 1.
*Refrigeration in Trauma of Extremities. P. Pernworth.—p. 3.
Dental Relations in Industrial Health Services. L. D. Heacock.—p. 5.
Evaluation of Borderline Cardiovascular Abnormalities. J. T. Larkin.—p. 9.
Minor Illness, Short Medical Absenteeism, Lateness and Separation in Mail Order Firm: L. P. Hellman and K. Brodman, with technical assistance of J. Deutschberger.—p. 14.
Hydrofluoric Acid Burn: Case Report. Agnes N. Flack and P. D. Scofield.—p. 17.
Industrial Health Congress. C. O. Sappington.—p. 18.

Vaccination Against Epidemic Influenza B.—Faced with a possible epidemic of influenza and having a small supply of the vaccine, Norwood and Sachs decided to vaccinate several hundred employees in a war industry. Subcutaneous inoculations of 1 cc. of inactivated influenza virus, types A and B, were given to 366 employees at the onset of an epidemic of influenza B. The incidence in the group vaccinated in time for antibody response was 1.94 per cent. In the comparable group of 4,280 unvaccinated employees the incidence was 8.23 per cent. Loss of time due to sickness was 4.4 times as great in the unvaccinated group as in the group vaccinated early enough for antibody response. The evidence indicates a protective effect of vaccination against epidemic influenza B.

Refrigeration in Trauma of the Extremities.—Pernworth shows that employment of cold for tissue preservation with hope for ultimate functional and morphologic rehabilitation is a therapeutic concept distinct from that of its use as an anesthetic preliminary to amputation. Employing only cracked ice without tourniquet, the author found it impossible to produce undesirable freezing effects regardless of the length of exposure. A man aged 56 who sustained a crushing injury of his left leg halfway between ankle and knee was given 500 cc. of plasma on arrival at the hospital, the leg was surrounded with a 2 inch layer of shaved ice from knee to toes, and it was wrapped in rubber sheeting. Ice was replenished every twenty minutes for two hours until a sterile thermometer inserted deep into the laceration indicated a temperature of 46 F. On the following day small areas of dry gangrene appeared on the dorsum of the foot; although the general condition remained excellent, the prognosis for survival of the leg seemed unfavorable. Nevertheless after thorough antiseptic preparation the tibial fragments were reduced manually, transfixed by thin Steinmann pins above and below the fracture and then incorporated in plaster. Refrigeration, which was resumed, afforded perfect anesthesia for this procedure. Seventy-two hours after the accident slight voluntary movement was present in the toes, but cutaneous gangrenous involvement appeared more extensive. Five days after the injury grayish blue areas of questionable viability had become pink, and active refrigeration was replaced by ice bags surrounding the limb. Within two weeks the hard shell-like plaques of superficial gangrene had separated sufficiently to allow their complete removal, leaving areas of healthy granulation tissue. Subsequent progress was uneventful and terminated in full recovery.

Journal of Aviation Medicine, St. Paul

17:499-612 (Dec.) 1946

Use of Body Armor in Aviation During Wartime. M. C. Grow.—p. 500.
Wounding Effect of High Energy Missiles. M. Halpern and J. B. Hickam.—p. 504.
Internal Injuries Produced by Abrupt Deceleration of Experimental Animals. R. F. Rushmer, E. L. Green and H. D. Kingsley.—p. 511.
Effects of Increased Intrapulmonary Pressure on Dark Adaptation. C. Sheard.—p. 526.
Psychologic Background of "Pilot Error" in Aircraft Accidents. E. C. Kunkle.—p. 533.
Effect of Pressure Breathing on Cutaneous Temperatures of Extremities. J. B. Bateman and C. Sheard.—p. 568.
Global Aviation Medicine in Air Transport Command. M. S. White. —p. 579.
*Passenger Comfort in Commercial Aviation. A. D. Tuttle.—p. 584.
*Variations in Angioscotoma in Response to Prolonged Mild Anoxia. G. M. Smith, C. P. Seitz and K. B. Clark.—p. 590.
Pathologic Lesions Produced by Explosive Decompression. A. Edelmann, W. V. Whitehorn, A. Lein and F. A. Hitchcock.—p. 596.
*Use of Drugs for Prevention of Decompression Sickness. O. L. Williams, W. R. Lyons, E. V. Bridge and S. F. Cook.—p. 602.
Studies on Altitude Decompression Sickness: III. Effects of Denitrogenation. J. S. Gray, S. C. F. Mahady and R. L. Masland.—p. 606.

Passenger Comfort in Aviation.—Tuttle states that the altitude conditioned plane assures low altitude comfort even when flying at high altitudes. This type of plane will eliminate most cases of discomfort currently being encountered aloft. Because of the smoother air prevailing at the higher cruising levels, and the rapid ascents and descents made possible with this new equipment, airsickness rates should fall perceptibly. The same holds true for ear trouble, which should become practically negligible in the absence of appreciable pressure changes on the drum. Because of the passengers' comparatively low exposure to the effects of altitude the need for administration of oxygen should also become extremely rare. The air transportation industry's adoption of the pressure cabin type of airplane reflects the greatest stride forward ever made in passenger comfort aloft.

Angioscotoma in Prolonged Mild Anoxia.—Smith and his associates tested the peripheral blind area (angioscotoma) of 15 subjects five times during a seven and one-half hour exposure to an altitude of 10,000 feet, simulated in a nitrogen dilution chamber. A progressive and statistically significant increase in the size of the scotoma was observed, which became most accentuated at the end of seven and one-half hours. The results are in contrast with the negative data obtained when psychomotor performance is measured. When extraneous motivational factors are eliminated or minimized (and this is probably true of a visual task), an anoxic effect may become progressively evident with prolonged exposure to even a moderate altitude.

Drugs for Prevention of Decompression Sickness.—Williams and his group found that oral premedication with codeine and aspirin, aminophylline and meperidine in an effort to prevent or alleviate the pain of decompression sickness, failed to influence appreciably the performance of 21 subjects exercising at a simulated altitude of 35,000 feet. These investigators think it unlikely that aminophylline and any well known analgesic drug will be of value in the prevention and alleviation of the pain of decompression sickness when taken as a premedication. This does not rule out the possibility that in cases of severe pain occurring at altitude one of the stronger analgesics such as morphine given hypodermically at altitude might be of value.

Journal of Bone & Joint Surgery, Boston

29:1-258 (Jan.) 1947

Education and Certification of Orthopedic Surgeons in the United States. J. A. Key.—p. 1.
*Complications of Fractures of Neck of Femur. H. B. Boyd and I. L. George.—p. 13.
Pathology of Ununited Fractures of Neck of Femur. Mary S. Sherman and D. B. Phemister.—p. 19.
*Complications of Old Fractures of Neck of Femur; Results of Treatment by Vitallium Mold Arthroplasty. M. N. Smith-Petersen, Carroll B. Larson, O. E. Aufranc and W. A. Law.—p. 41.
Newer Pathologic and Physiologic Concepts of Anterior Poliomyelitis and Their Clinical Interpretation. A. Steindler.—p. 59.
Muscle Fibrodystrophy: Syndrome Causing Chronic Physical Disability. R. Bingham.—p. 85.
Pseudarthrosis of Long Bones. I. Blumenfeld.—p. 97.
Fracture Dislocation of Thoracolumbar Spine, with Special Reference to Reduction by Open and Closed Operations. J. K. Stanger.—p. 107.
Osteotomy-Osteoclasis: Method for Correcting Long Bone Deformities. J. R. Moore.—p. 119.
Fracture Dislocation of Ankle with Fixed Displacement of Fibula Behind Tibia. D. M. Bosworth.—p. 130.
Formation and Significance of Vertebral Ankylosis in Tuberculous Spines. J. Puig Guri.—p. 136.
Use of Parallel Grafts and of Two Stage and Three Stage Interlocking Grafts in Treatment of Idiopathic Scoliosis: End Results in 41 Cases. T. Outland and O. Corn.—p. 163.
Vitamin A Deficiency and Excess in Relation to Skeletal Growth. S. B. Wolbach.—p. 171.
Mobilization of Metacarpophalangeal Joints: Arthroplasty and Capsulotomy. S. B. Fowler.—p. 193.
Preemployment Examinations of Back. S. F. Stewart.—p. 215.

Fractures of Neck of Femur.—Boyd and George present the complications and end results of internal fixation of 300 acute central fractures of the neck of the femur. Smith-Petersen nails were used in 285 of the hips, and Knowles pins were used in 15. On the basis of the results obtained the authors conclude that fracture of the neck of the femur has the following prognosis: mortality, 9.3 per cent; poor end result, 28.1 per cent, including ununited fractures and severe arthritic changes; a fair end result, 19 per cent, and a good end result, 43.6 per cent. It appears that the number of patients with severe arthritic changes in the hip will exceed the number with nonunion. The problem of rehabilitation and treatment of patients with severe degenerative arthritic changes may become more important than the treatment of those with ununited fractures.

Vitallium Mold Arthroplasty in Old Fractures of Neck of Femur.—According to Smith-Petersen and his associates vitallium mold arthroplasty has been performed in 42 cases presenting complications of femoral neck fractures during the past seven and one-half years. Mold arthroplasty consists in first creating a joint as nearly perfect, mechanically, as possible and then guiding nature's repair by means of an inert mold and carefully supervised exercises. As applied to the treatment of complications of fractures of the femoral neck, the procedure is varied according to the extent of the degenerative changes; four different types of mold arthroplasty have resulted. These include (1) routine mold arthroplasty, (2) modified Whitman reconstruction operation, (3) modified Colonna reconstruction operation and (4) intertrochanteric mold arthroplasty. Routine mold atrophy is indicated in aseptic necrosis of the head, limited in extent and occurring after union of the fractured neck. It consists in reshaping the head and acetabulum so as to create two congruous surfaces; the "crater" representing the necrotic area is excised down to bleeding bone and, in cases of relatively extensive necrosis, the resulting defect is packed with cancellous bone from the iliac crest. The reshaped femoral head is covered with a vitallium mold and replaced in the acetabulum. The authors also describe the other three types of mold arthroplasty and say that the results were satisfactory in more than four fifths of the cases.

Journal of Indust. Hygiene & Toxicology, Baltimore

29:1-58 (Jan.) 1947

Observations on Effects of Diphenyl, o- and p-Aminodiphenyl, o- and p-Nitrodiphenyl and Dihydroxyocatachlorodiphenyl on Experimental Animals. W. B. Deichman, K. V. Kitzmiller, M. Dierker and S. Witherup.—p. 1.
Determination of Acetylene Tetrachloride in Air, Protection Afforded by Gas Mask Canisters Against Acetylene Tetrachloride. J. Goldenson and J. W. Thomas.—p. 14.
Biologic Assay of Inhaled Substances by Dosimetric Method: Retained Median Lethal Dose and Respiratory Response in Unanesthetized, Normal Goats Exposed to Different Concentrations of Phosgene. L. Karel and R. E. Weston.—p. 23.
Adaptation of Dosimetric Method for Use in Smaller Animals: Retained Median Lethal Dose and Respiratory Response in Normal, Unanesthetized, Rhesus Monkeys (Macaca Mulatta) Exposed to Phosgene. R. E. Weston and L. Karel.—p. 29.
Mixed Color Method for Determination of Cadmium in Air and Biologic Samples by Use of Dithizone. F. W. Church.—p. 34.
Evaluation of Minimal Prophylactic Dose of Antirachitic Radiation for Rats with Observations on Antirachitic Wavelength Absorption by Smoky Atmospheres. K. K. Kay and H. M. Barrett.—p. 41.
*Acute and Chronic Toxicity of Methyl Chloride: I. Mortality Resulting from Exposures to Methyl Chloride in Concentrations of 4,000 to 300 Parts per Million. W. W. Smith and W. F. von Oettingen.—p. 47.
*Urinary Fluoride Excretion Among Men Employed in Alkylation Plants Using Hydrogen Fluoride Process. E. J. Largent.—p. 53.
Inhalation Toxicity of Ketene and of Ketene Dimer. H. A. Wooster, C. C. Lushbaugh and C. E. Redemann.—p. 56.

Toxicity of Methyl Chloride.—Smith and von Oettingen present mortality data for several species of animals exposed to methyl chloride in concentrations ranging from 4,000 to 300 parts per million on a schedule of six hours daily per week. If it is assumed that susceptibility of human beings to the lethal effects of methyl chloride is comparable to that of dogs and monkeys, then it is evident that daily exposures to concentrations of 500 parts per million are extremely dangerous even for a period of two weeks or less. At the lower concentrations there appears to be some degree of correlation between development of the central nervous system and toxic effects of methyl chloride. If this is true, human beings may be more susceptible to the toxic effects than any laboratory animals studied. If work in atmospheres contaminated by methyl chloride is unavoidable, the duration of exposure should be cut to a minimum and a maximal interval allowed between exposures. Delayed symptoms and delayed deaths are typical of methyl chloride poisoning.

Urinary Fluoride Excretion Among Men Employed in Alkylation Plants.—Largent points out that in one process for manufacturing high octane gasoline anhydrous hydrogen fluoride is employed as a catalyst. Small leaks in feed lines may give rise to atmospheric contamination in such degree as might cause chronic intoxication of workmen. The average normal urinary excretion of fluorine by man is 0.4 to 1 mg. per day. Largent presents investigation of urinary fluoride content of samples of urine collected from alkylation plant employees. The results of analysis of some 500 samples of urine are given in a table. Only one sample had a fluoride concentration greater than 4 mg. per liter, and in most of the samples the fluoride content was normal or but little above normal.

Journal of Lab. and Clinical Medicine, St. Louis

32:1-108 (Jan.) 1947

Metabolic Function of Pteroylglutamic Acid and Its Hexaglutamyl Conjugate: I. Hematologic and Urinary Excretion Studies on Patients with Macrocytic Anemia. F. H. Bethell, M. C. Meyers, G. A. Andrews and others.—p. 3.
Id.: Urinary Excretion Studies on Normal Persons: Effect of Conjugase Inhibitor. Marian E. Swendseid, O. D. Bird, R. A. Brown and F. H. Bethell.—p. 23.
Effect of Methylated Xanthines on Clotting Time of Blood. N. C. Gilbert, F. Dey and Ruth Trump.—p. 28.
*Penicillin in Beeswax and Peanut Oil, New Preparation Which is Fluid at Room Temperature: Absorption and Therapeutic Use. H. L. Hirsh, H. F. Dowling, J. J. Vivino and Georgine Rotman-Kavka.—p. 34.
Pharmacodynamic Effect in Man of Streptomycin Containing a Histamine-like Factor. W. L. Lewitt and J. J. Curry.—p. 42.
*Histamine Antagonists: VI. Comparative Antihistaminic Activity of Some Ethylenediamine Drugs in Guinea Pig. S. Friedlaender, S. M. Feinberg and A. R. Feinberg.—p. 47.
Unusual Instances of Auricular Flutter. S. F. Aronson and L. N. Katz.—p. 51.
Effect of Oxygen on Malaria: An In Vivo Study in Ducks. R. H. Rigdon and Nona B. Varnadoe.—p. 57.
Determination of Normal Mean Corpuscular Weight (Erythrocyte). Chen-Ting Ch'in.—p. 66.
Bone Marrow of Normal Cats. A. Sawitsky and L. M. Meyer.—p. 70.

Penicillin in Beeswax and Peanut Oil.—Hirsh and his associates employed a preparation of penicillin in beeswax and peanut oil which differs from that of Romansky and Rittman in that it becomes fluid at room temperatures about fifteen minutes after it has been removed from the refrigerator. Twenty-seven patients with various infections were treated with doses varying from 300,000 to 600,000 units once or twice daily. The results were similar to those obtained with the use of other preparations of penicillin in beeswax and oil or with equivalent daily doses of penicillin in aqueous solution. The preparation was found to be easier to administer than the preparations made according to the original Romansky formula.

Histamine Antagonists.—Friedlaender and his associates made a comparative study of 4 synthetic histamine antagonists: benadryl, pyribenzamine, antergan and neoantergan. All compounds afforded some protection to guinea pigs against the fatal effects of intravenous histamine. Five to six times the LD 100 of histamine was necessary to kill all animals protected with 3 mg. per kilogram of benadryl or antergan. The same dose of pyribenzamine was able to protect some animals against as much as thirty-five lethal doses, while neoantergan protected some animals against as much as three times this amount of histamine.

J. Neuropathology & Exper. Neurology, Baltimore

6:1-110 (Jan.) 1947

Multinucleation of Cortical Nerve Cells at Margins of Traumatic Lesions of Human Brain. C. W. Rand and C. B. Courville.—p. 1.
Precocious Puberty with Hypothalamic Tumor (Infundibuloma): Case Report. J. W. Papez and A. Ecker.—p. 15.
Concerning Gangliogliomas of Brain. P. Bailey and Helen Beiser.—p. 24.
Central Nervous System Resistance: II. Lack of Correlation Between Vascularity and Resistance to Circulatory Arrest in Hypothalamic Nuclei. R. G. Grenell and H. Kabat.—p. 35.
*Torulosis of Central Nervous System. G. B. Hassin.—p. 44.
Chronic Progressive Spinocerebellocortical Lipodystrophy Affecting Certain Arterial Supply Areas. O. Marburg and W. Riese.—p. 61.
Agenesis of Corpus Callosum and Associated Malformations. W. R. Kirschbaum.—p. 78.
Labyrinthine Reflexes Following Graded Head Trauma in Rat: Preliminary Report. S. R. Govons.—p. 95.
Congenital Malformation of Brain: Critical Review. F. A. Mettler.—p. 98.

Torulosis of Central Nervous System.—The 2 cases of torula infection of the nervous system reported by Hassin presented a similar clinical but a dissimilar pathologic picture. One patient had an encapsulated tumor the size of a hen's egg which displaced the pons and medulla to the right. The other patient had disseminated involvement of the cerebrospinal system, including the cranial nerves, spinal roots and meninges. In both cases repeated routine examinations of the spinal fluid gave essentially normal results, and the course was chronic in case 1 and acute in case 2. In both cases a diagnosis of brain tumor was made and operations were performed. Aniline dyes (toluidin blue, thionin, methyl blue) bring out in a Torula the presence of a capsule supplied with numerous spikes, spines or spicules and also of Torulae deprived of capsules as usually seen when hematoxylin-eosin stain is used (so-called naked Torulae). Single Torulae or small torular foci produce no reactive changes, which however are present around large foci or in their vicinity in the form of large infiltrations. Fragments of Torulae are present within the tuft cells of the choroid plexuses—an additional proof that the function of the choroid plexus is excretory and not secretory.

Journal of Neurophysiology, Springfield, Ill.

10:1-86 (Jan) 1947

Synaptic Conduction to Giant Fibers of Cockroach and Action of Anticholinesterases. K. D. Roeder, Nancy K Kennedy and Evelyn A Samson.—p 1.
Generality of Role of Acetylcholine in Nerve and Muscle Conduction. T. H. Bullock, H Grundfest, D. Nachmansohn and M A. Rothenberg —p. 11.
Giant Nerve Fiber System of Crayfish· Contribution to Comparative Physiology of Synapse C A G. Wiersma —p. 23.
Topographical Representation of Muscles in Motor Cortex of Monkeys. *H Chang, T C. Ruch and A A Ward Jr —p 39*
Effect of Sedatives on Delayed Response in Monkeys Following Removal of Prefrontal Lobes Marjorie Wade —p 57.
Effect of Di Isopropyl Fluorphosphate on Action Potential and Cholinesterase of Nerve II T H Bullock, H. Grundfest, D. Nachmansohn and M A Rothenberg —p 63
Effects of Potassium on Endplate Potential and Neuromuscular Transmission in Curarized Semitendinosus of Frog. S M. Walker and Y. Laporte.—p 79.

Journal of Nutrition, Philadelphia

32:583-700 (Dec) 1946

Urinary Excretion of Riboflavin by College Women Wilma Brewer, Thelma Porter, Ruth Ingalls and Margaret A Ohlson —p 583
Biologic Value of Proteins in Relation to Essential Amino Acids Which They Contain IV Analysis of Fifteen Protein Foods for Ten Essentials J E. Edwards, R R Sealock, W. W. O'Donnell and others —p 597.
Id V Comparison of Average Effect of Ten Single Amino Acids with Extra Egg Protein as Supplements to an Egg Diet Estelle E. Hawley, L E Edwards, L C Clark and J R. Murlin —p 613
Reproduction and Lactation Studies with Rats Fed Natural Rations. R R Spitzer and P H Phillips —p 631
Influence of Caloric Intake on Growth Utilization of Dietary Protein. D K Bosshardt, Winifred Paul, Kathleen O'Doherty and R H. Barnes – p 641
Specific Dynamic Action of Diets High in Carbohydrate or Fat. G C. Ring —p 653
Effect of Proteins Low in Tryptophan on Growth of Chickens and on Laying Hens Receiving Nicotinic Acid Low Rations. G. M. Briggs, A C Groschke and R J Lillie —p 659.
Utilization of Iron from Different Foods by Normal Young Rats. Orrea Florence Pye and Grace MacLeod —p. 677.

Journal of Pediatrics, St. Louis

30:1-112 (Jan) 1947

*Diagnosis and Treatment of Tracheal and Esophageal Obstruction Due to Congenital Vascular Ring R. H. Sweet, C. W Findlay Jr. and Gertrud C. Reyersbach —p 1.
*Penicillin in Treatment of Diphtheria and Diphtheria Carriers S Karelitz, L R Wasserman and R E Moloshok.—p. 18
Studies on Pertussis Immunization W Sako —p 29.
Treatment of Allergic Patients with Benadryl. Report of 79 Cases. H Goldstein —p 41
Treatment of Acute Diarrhea in Cincinnati General Hospital During Years 1944 and 1945 C. Weihl, S Rapoport and Katharine Dodd. —p 45
*Penicillin as Aid in Treatment of Primary Staphylococcus Pneumonia with Empyema W. S. Davis, Mary E Hyman and F. D. Ruhstaller. —p 55
A B Blood Groups and Rh Hr Blood Types in Congenital Athetosis H Bakwin and A S Wiener —p 64
Follow Up Study in Rheumatic Subjects Previously Treated with Prophylactic Sulfanilamide. Janet S Baldwin —p 67
Spotted Fever Treated with Para Aminobenzoic Acid W. J. Hendricks and M. Peters —p 72
Postscarlatinal Gangrene with Prolonged Prothrombin Time. B. D. Webb, Elizabeth J. Dubs and Elizabeth Conrad —p 76.
Experiences with Japanese Pediatrics H. A Agerty.—p. 82

Tracheal and Esophageal Obstruction Due to Congenital Vascular Ring.—Sweet and his collaborators present detailed reports of 2 cases of the congenital anomaly characterized by a double aortic arch in which they performed operations. The patients were a boy of 3 and a half months and a boy of 9 months If the posterior and right lateral aspects of the esophagus are indented by the larger persistent right aortic arch, the lesser aortic arch, which is the vessel to be divided, will be found on the left anterolateral aspect of the mediastinum The visualization of the main aorta descending down the left side of the vertebral column would corroborate this probability. Obviously, under these conditions the vessel to be chosen for ligation will be best reached through the left pleural cavity. Case 1 illustrates this. Case 2 is a mirror image of case 1. Here there were defects of the left lateral and posterior surfaces of the esophagus caused by the larger left aortic arch. The descending aorta was seen by x-ray in the right chest. The anomalous, smaller, right arch could be reached only through *the right chest*

Penicillin in Diphtheria and Diphtheria Carriers.—Karelitz and his associates administered penicillin to persons acutely ill with diphtheria and convalescent carriers. The results were encouraging in the treatment of 5 convalescent carriers and 6 patients with faucial diphtheria. The presence of diphtheria among prisoners of war and among American soldiers in the European Theater of Operations afforded the opportunity to investigate these problems. The study was undertaken simultaneously in five hospitals. Patients with faucial diphtheria treated with antitoxin and penicillin, the latter injected intramuscularly every three hours until three consecutive negative nose and throat cultures were obtained daily, were rendered diphtheria negative more rapidly than were the patients who received antitoxin and no penicillin. Carriers of virulent Corynebacterium diphtheriae were likewise rendered free from the bacteria by treatment with penicillin. Penicillin applied *locally in the form of nose drops* or as nasal spray was not effective in faucial diphtheria but seemed more promising in the treatment of carriers Penicillin was ineffective in preventing toxic complications of diphtheria but seemed to hasten the clearing and further the development of complications due to pyogenic organisms. Penicillin should not be used as a substitute for diphtheria antitoxin.

Penicillin for Primary Staphylococcic Pneumonia.—Davis and his associates treated 7 children with staphylococcic pneumonia and empyema by giving both intrapleural and intramuscular injections of penicillin One infant died thirty-six hours after admission. Treatment consisted in the administration of relatively large doses of penicillin intramuscularly and directly into the pleural space, and of moderately large amounts of sulfonamide by mouth. Supportive treatment included blood transfusions and maintenance of a good state of nutrition. Patients should be followed closely by x-ray and fluoroscopy and by repeated physical examination. Surgical drainage should be instituted when indicated.

Journal of Thoracic Surgery, St. Louis

15:373-456 (Dec.) 1946

*Lobectomy and Pneumonectomy in Treatment of Pulmonary Tuberculosis R. H. Sweet —p 373.
Pulmonary Resection in Treatment of Tuberculosis Present Day Technic and Results R H. Overholt, L. Langer, J. T. Szypulski and N. J. Wilson —p. 384
Treatment of Chronic Spontaneous Pneumothorax by Lobectomy: Report of Case. L. P. Hoyer and O T Clagett —p. 418
Role of Pulmonary Plexus in Lung Surgery: Experimental Study. W. H. Bilfeldt-Nicholls and A Escala Bawden —p 422.
Treatment of Thoracic Actinomycosis by Penicillin and Sulfonamide Drugs H R Decker.—p 430.

Lobectomy and Pneumonectomy in Pulmonary Tuberculosis.—Sweet says that until May 1945 a total of 27 lobectomies and 36 pneumonectomies had been performed at the Massachusetts General Hospital. He says that lobectomy and pneumonectomy can be performed with a considerable degree of safety in pulmonary tuberculosis. The best results followed pneumonectomy in bronchostenosis and thoracoplasty failure and lobectomy in those patients who might otherwise have been treated by means of thoracoplasty. Extirpative surgery has failed to solve the problem of management of patients with enormous cavities which are of the type not responding to collapse therapy. There is no evidence that, except in certain individual cases, lobectomy is superior to thoracoplasty as far as end results are concerned Because of the practical impossibility of eradicating the entire disease in the majority of patients by extirpation, the most important factor is the resistance of the patient to the disease. Because pulmonary tuberculosis is not primarily a surgical disease, the hope for future progress lies in the possibility that some medicament may be developed which will overcome the invading organism.

Journal of Urology, Baltimore

57:1-202 (Jan.) 1947. Partial Index

New Technic of *Perirenal Air Insufflation.* F. J. Barquin.—p. 1.
Spinal Cord Injuries: Care of Bladder. G. C. Prather.—p. 15.
Further Observations in Management of Cord Bladder by Transurethral Resection. J. L. Emmett.—p. 29.
Problem of Prostate Gland. G. Carroll.—p. 42.
Modern Conception of Drainage and Irrigation of Urinary Tract. C. L. Deming.—p. 49.
Consideration of Causes of Incontinence, Temporary and Permanent, Following Perineal Prostatectomy. O. Grant and R. Lich Jr.—p. 61.
Surgical Injuries to Urinary Tract. J. U. Reaves.—p. 65.
Management of Injuries to Genitourinary System During War. W. H. Graham.—p. 73.
Present Status of Streptomycin Therapy. S. L. Raines.—p. 79.
Clinical Observations on Nature of Urogenital Gonorrhea. J. H. Dougherty, C. S. DiLucia, A. DiDonna and J. C. Riddler.—p. 84.
Bilateral Pelvic and Ureteral Duplication with Uterine Ectopic Ureter. A. B. Hepler.—p. 94.
*Bilateral Hypernephroma: Case Report. F. L. Senger, J. J. Bottone and G. E. Murray.—p. 106.
*Hypertension: Results of Splanchnicectomy in Patients with Abnormal Pyelograms. R. M. Nesbit and R. T. Plumb.—p. 116.
Carcinoma of Right Ureter Secondary to Neoplasm of Descending Colon. A. H. Kleiman.—p. 120.
Mucinous Adenocarcinoma of Bladder. F. S. Patch and J. E. Pritchard.—p. 126.
Carcinoma of Bladder: Classification of Epithelial Tumors and Study of Effects of External Radiation. F. H. Colby and R. C. Sniffen.—p. 133.
Massive Fatal Air Embolism Following Suprapubic Prostatectomy. M. F. Campbell and J. L. Work.—p. 140.
Twelve Years' Experience with Braasch-Bumpus Resectoscope. B. D. Massey.—p. 149.
Significance of Phosphatase Findings in Carcinoma of Prostate. Helen Q. Woodard and A. L. Dean.—p. 158.
Differential Diagnosis of Tumors of Prostate and Adjoining Areas of Rectum and Bladder by Chemical Analysis. A. L. Dean and Helen Q. Woodard.—p. 172.
Three Cases of Testicular Tumor. J. A. Taylor.—p. 175.

Case of Bilateral Hypernephroma.—Senger and his associates describe a case of bilateral hypernephroma in which the diagnosis was confirmed by tissue study of the tumors during life. This case presents the unusual occurrence of a metastatic lesion appearing in the thyroid gland. This is the first case of bilateral hypernephroma in a female, and the second case in which a biopsy has been obtained to prove tumor in the remaining kidney. The literature has been reviewed and summarized to bring the total number of reported cases to 17.

Splanchnicectomy in Hypertensive Patients with Abnormal Pyelograms.—While reviewing pyelographic data on cases of hypertension, Nesbit and Plumb found 16 abnormal pyelograms. These patients subsequently underwent splanchnicectomy and have been followed for a year or longer. All the patients had supradiaphragmatic removal of thoracic eighth to twelfth ganglions and approximately 20 cm. of the splanchnic nerves. Splanchnicectomy resulted in symptomatic improvement in most of the patients, and corresponding lowering of the elevated blood pressures occurred. All the patients had structural abnormalities of the kidneys that were made evident by pyelography; some were bilateral and some unilateral. Splanchnicectomy appears to have caused no improvement in 1 patient whose renal disease was far advanced; she died two months later of uremia. It appears that gross renal disease does not in itself prevent an effective response to splanchnicectomy, but the operation should not be advocated when the prognosis for life is adversely affected by advanced kidney disease.

Nebraska State Medical Journal, Lincoln

32:1-48 (Jan.) 1947

Medical Problems in Surgical Patient. G. B. Eusterman.—p. 5.
Pre- and Post-Operative Management of Urologic Surgical Patient. C. Tahara and E. Hess.—p. 9.
Functional Indigestion. M. C. Howard.—p. 18.
Some Remarks on Second Stage of Labor with Reference to Use of Forceps. L. A. Calkins.—p. 23.
Early Ambulation in Gynecologic Surgery and Obstetrics. H. E. Anderson and Janet M. Boog.—p. 26.

New England Journal of Medicine, Boston

236:1-44 (Jan. 2) 1947

Coarctation of Aorta: Review and Report of Case. E. D. Maire.—p. 1.
*Hormone Producing Tumor of Adrenal Cortex, with Congenital Absence of Contralateral Adrenal Gland: Report of Case. H. M. Spence and F. G. Thompson Jr.—p. 13.
Acute Appendicitis Occurring During Course of Other Disease. E. S. Hurwitt.—p. 20.
*Asiatic Schistosomiasis: Report of Early Case. L. O. Warren Jr.—p. 24.
Physiologic and Clinical Significance of Plasma Proteins and Protein Metabolites. J. Metcoff and F. J. Stare.—p. 26.
Bulbar Type of Poliomyelitis.—p. 36.
Metastatic Renal Cell Adenocarcinoma (Hypernephroma) of Left Upper Lobe of Lung.—p. 38.

236:45-86 (Jan. 9) 1947

Presentation of Henry Jacob Bigelow Gold Medal: Introductory Remarks and Presentation of Medal. D. Munro.—p. 45.
Surgery of Thyroid Gland. F. H. Lahey.—p. 46.
Visceral Leishmaniasis: Report of Case. S. P. Waud and S. Kruger.—p. 63.
Coexistent Primary Carcinoma of Fallopian Tube and of Breast. Report of Case. J. F. Curran and E. A. Kilroy.—p. 64.
Complete Absence of Lochia Following Delivery: Report of Case. R. J. Heffernan and C. Leavitt.—p. 65.
Physiologic and Clinical Significance of Plasma Proteins and Protein Metabolites (concluded). J. Metcoff and F. J. Stare.—p. 68.
Ulcerative Colitis: Amyloid Degeneration of Kidneys, Liver, Spleen and Adrenal Glands.—p. 75.
Chronic Glomerulonephritis, Inactive.—p. 78.

Hormone Producing Tumor of Adrenal Cortex.—A case of Cushing's syndrome due to an adrenal tumor is reported in which death of acute adrenal insufficiency occurred thirty-six hours after operative removal of the tumor and in which, at necropsy, complete absence of the opposite adrenal gland was found. This is the fourth such case in the literature. From a review of the available literature it is concluded that an increasing number of successful operative removals are being done as the result of better postoperative therapy. The prognosis, however, is still exceedingly grave in the cases associated with Cushing's syndrome, because of the atrophy and insufficiency of the supposedly normal gland.

Asiatic Schistosomiasis.—The case of acute Asiatic schistosomiasis reported by Warren was unique in that an opportunity was afforded to follow the clinical course with repeated sigmoidoscopies and serial roentgenograms from the onset of symptoms to the termination of a course of treatment—a period of sixty days. The characteristic yellowish nodules of the rectosigmoid and upper rectum were shown to have an earlier stage in which they are distinctly red and are smaller and less resistant to the sigmoidoscope than they are in the later course of their development. The diagnostic value of sigmoidoscopy is confirmed. Serial roentgenologic findings are presented that may have represented a reaction of the lung parenchyma to ova or adult worms of Schistosoma japonicum. This case demonstrated the effectiveness of antimony and potassium tartrate (tartar emetic).

236:87-120 (Jan. 16) 1947

*Epidemic Diarrhea of Newborn in Massachusetts: Ten Year Survey. A. D. Rubenstein and G. E. Foley.—p. 87.
Leiomyoma of Jejunum: Report of Case. S. F. Marshall and M. L. Welch.—p. 95.
Arthroplasty of Elbow. W. R. MacAusland.—p. 97.
Effect of Amphetamine Sulfate on Spasmodic Flexion Movements of Foot: Report of Case. J. Loman.—p. 100.
Obstetrics. B. Tenney Jr.—p. 102.
Porphynuric Polyneuritis.—p. 109.
Chordoma of Third Lumbar Vertebra.—p. 112.

Epidemic Diarrhea of the Newborn.—Rubenstein and Foley review 19 outbreaks of epidemic diarrhea of the newborn as reported to the Massachusetts Department of Public Health from 1935 to 1945. Of 768 newborn infants who were exposed during the course of these outbreaks, 258 developed symptoms and 85 died, the case mortality being 33 per cent. The morbidity rates among premature and full term infants were 49 and 21 per cent respectively. The case mortality for premature infants was more than twice that for full term babies. Investigation of nursing technics and methods of formula preparation in nurseries where these outbreaks occurred revealed many inadequacies. Overcrowding, insufficient personnel, general use of a common rectal thermometer and inadequate supervision of formula making were frequently encountered. Laboratory examinations of so-called sterilizing solutions, including alcohol hand solution and thermometer dips, formulas, nipples and other utensils, showed heavy bacterial contamination. The etiology and the mode of transmission of epidemic diarrhea of the newborn are not known, but supervision of nursery room technics and of formula preparation constitutes a factor in the hospital care of newborn infants that merits greater attention from hospital administrators.

New Jersey Medical Society Journal, Trenton

44:1-38 (Jan.) 1947

Spontaneous Rupture of Spleen: Report of Case. T. H. Andrews.—p. 4.
Early Recognition of Epidemic Encephalitis. F. Frisch.—p. 6.

44:39-86 (Feb.) 1947

Cancer Program in New Jersey: II. Statewide Tissue Diagnostic Service.—p. 41.
Ambulatory Electric Shock Treatment. R. H. Stockfisch.—p. 47.
*Scleroderma Treated with Promin: Report of Case. Virginia Wuerthele.—p. 52.
Acute Osteomyelitis of Cervical Spine with Probable Epidural Infection: Report of Cure with Penicillin Therapy. L. I. Kaplan and H. S. Read.—p. 54.
Hospital Survey and Construction Act. H. A. Cotton Jr.—p. 56.

Promin in Scleroderma.—Wuerthele reports that in 1938 a woman aged 52 began to notice splinter-like, very tender lines under her nails. In 1942 a lump developed on the ulnar surface of the left arm. Numbness, pain and ulcerations of the second and third fingers of both hands occurred. Treatment with Hytakerol (a fraction of irradiated ergosterol) produced some improvement, but in 1946 examination of the hands showed club-like, purple fingers, contracted and painful. The nails were clawed and adherent to the underlying ulcers. Codeine was needed at frequent intervals for relief. Even air currents caused pain. The hands were entirely useless. At this stage promin jelly (a 5 per cent promin in tragacanth), was applied liberally to the hands three times daily and covered with white gloves. Improvement in pain was noticed after two days. The ulcers stopped oozing and began to dry after one week. No further codeine was needed. The patient could touch her fingers to objects without pain. The subungual ulcers healed entirely. The patient was able to dress and feed herself, to sew, make beds, open doors. Even knocking the fingers against a table did not cause pain.

North Carolina Medical Journal, Winston-Salem

8:1-64 (Jan.) 1947

Problems of Biliary Tract Surgery. I. S. Ravdin.—p. 1.
*Revival of Extrapleural Pneumonolysis with Use of New Filling Material, Methyl Methacrylate: Report of 31 Cases. Irene McCain and P. P. McCain.—p. 6.
Definitive Sex Endocrine Therapy in Female. R. A. Ross.—p. 12.
Torsion of Spermatic Cord: Review of 6 Cases. W. M. Coppridge and R. G. Rosser Jr.—p. 14.
Sterilization of Insane and Mentally Deficient in North Carolina. W. P. Richardson and C. J. Gamble.—p. 19.
Some Factors Concerning Sterilization, Based on a Study in Orange County, N. C. G. H. Lawrence.—p. 22.
Aglossia Congenita: Report of Case Without Other Congenital Malformations. R. K. Farrington.—p. 24.
Treatment of Acute Anterior Poliomyelitis. R. B. Lawson.—p. 26.
Importance of *pH* in Treatment of Diseases of Vagina. C. A. Anderson.—p. 29.

Extrapleural Pneumonolysis.—The McCains point out that extrapleural pneumonolysis has recently been revived with the use of a new filling material, methyl methacrylate, commonly known as "lucite." After many experiments on animals, Wilson began to apply the procedure to patients with pulmonary tuberculosis. Through September 1946 approximately 60 patients have had this operation at Duke Hospital. Thirty-one of these patients, who were from the North Carolina Sanatorium, form the basis of this report. The authors conclude that extrapleural pneumonolysis with the use of methyl methacrylate spheres as packing material appears to offer a reasonably safe means of selective collapse therapy in a limited group of patients with pulmonary tuberculosis for whom no other method of collapse is possible. The operation is not without risk, the most serious complications being incidental to penetration of the pleural space and tuberculous cavities, and to infection. Means of preventing these complications have apparently been determined. The anterior approach under local anesthesia is less shocking to the patient than the posterior thoracoplasty type approach and is to be preferred.

Ohio State Medical Journal, Columbus

43:1-112 (Jan.) 1947

Evaluation of Nutrition in Childhood. C. W. Wyckoff.—p. 33.
Mental Hygiene Program for Ohio: Blue Print for Action. F. F. Tallman.—p. 37.
Place of Physical Medicine in General Practice. W. J. Zeiter.—p. 42.
Cancer of Breast. E. J. McCormick.—p. 48.
Dissecting Aneurysm of Aorta. W. Abramson, D. E. Nolan and G. W. Pedigo Jr.—p. 52.
Electrocardiograph in Industrial Medical Practice: Report Based on 2,000 Electrocardiograms. E. M. Kline and J. H. Hess.—p. 54.

43:113-216 (Feb.) 1947

Epilepsy. E. Haynes and N. P. Dallis.—p. 145.
Practical Concepts in Anesthesia. E. B. Tuohy.—p. 148.
Responsibility in Venereal Disease Control. R. E. Heering.—p. 154.
*Blindness and Brucellosis: Brief Review and Report of Case. L. J. Agin.—p. 159.
Abdominal Pregnancy. H. F. Burkons.—p. 161.
Survey Method of Diagnosing Gastrointestinal Problem Cases. A. A. Hall.—p. 165.
External Otitis. G. S. Lamkin.—p. 167.
Massive Intraperitoneal Hemorrhage Caused by Rupture of Hemorrhagic Corpus Luteum. E. B. Pedlow.—p. 168.

Blindness and Brucellosis.—Agin thinks that ocular damage due to undulant fever is probably more common than has been considered heretofore. He describes the types of ocular damage attributable to brucellosis and a case wherein vision was totally destroyed. Efforts should be made in eye infections to detect or rule out the presence of a systemic invasion by the organism of undulant fever. In the presence of ocular brucellosis general treatment should be under the guidance of an internist and should consist of chemotherapy with sulfonamides, Foshay vaccine, immune serum and nonspecific protein therapy. Locally the usual procedures for uveal tract infection should be adhered to, including heat, atropinization and protection from excess light.

Pennsylvania Medical Journal, Harrisburg

50:345-456 (Jan.) 1947

Present Day Concepts of the Psychoneuroses. F. G. Ebaugh.—p. 361.
Eclectic Approach in Treatment of Neuroses. M. H. Weinberg.—p. 370.
Seeds of Immaturity. E. A. Strecker.—p. 377.
Nontuberculous Pulmonary Calcification and Histoplasmin Sensitivity. R. H. High.—p. 384.
Physical Therapy, Rehabilitation and Occupational Therapy in Surgery. J. M. Deaver.—p. 388.
Adenoidectomy vs. Adenoidotomy. T. F. Furlong Jr.—p. 392.

50:457-552 (Feb.) 1947

Modern State Health Administration. V. A. Getting.—p. 473.
Physician Looks to Improved Public Health Administration in Pennsylvania.—O. E. Turner.—p. 480.
Administrative Problems of State Health Department. J. M. Campbell.—p. 485.
Modern Trends in Management of Uterine Carcinoma. F. L. Payne and G. L. Hoffman.—p. 491.

Review of Gastroenterology, New York

14:1-72 (Jan.) 1947

Gastrointestinal Manifestations of Acute and Chronic Infectious Hepatitis. M. H. Barker and R. B. Capps.—p. 9.
Relapses and Recurrences of Infectious Hepatitis. E. Rappaport and G. Klatskin.—p. 17.
Some Aspects of Stomach Function in Health and Disease. F. L. Apperly.—p. 41.
Duodenal Ulcer—Clinical and Therapeutic Aspects: Follow-Up of 285 Cases. N. W. Chaikin.—p. 49.

14:73-148 (Feb.) 1947

Therapeutic Aspects of Peptic Ulcer. R. Ehrmann.—p. 89.
Surgical Treatment of Duodenal Ulcer. F. W. Bancroft.—p. 98.
*Ambulatory Treatment of Peptic Ulcers with Protein Hydrolysates and Dextri-Maltose. Co Tui.—p. 108.
Histamine in Treatment of Peptic Ulcer. B. M. Bernstein.—p. 129.

Protein Hydrolysates and Dextri-Maltose.—Co Tui reviews observation on the effects of his hyperalimentation treatment in 164 intractable cases of peptic ulcer. He gives protein hydrolysate in doses which furnish 0.6 Gm. of nitrogen per kilogram of body weight, and a carbohydrate, usually salt free dextri-maltose, to make up to 50 calories per kilogram. There was complete relief of pain from the first feeding on in 48; in 82 the pain was relieved in one or two days and in 18 from two days to one week. Night pains disappeared in the first three days in 35, and in the first five days in 22. The treatment failed in 16, or about 10 per cent, of the patients. To these failures must be added 18 who were unable to tolerate the mixtures. However, since the feeding of separate solutions was instituted, i. e., the dextri-maltose following the hydrolysates, there have been no failures due to intolerance in over 30 consecutive cases.

Southern Medical Journal, Birmingham, Ala.

40:1-114 (Jan.) 1947

*Effect of Transthoracic Vagus Resection on Patients with Peptic Ulcer. R. C. Smith, J. M. Ruffin and G. J. Baylin.—p. 1.
Causes of Failure in Glaucoma Operations. B. F. Payne.—p. 11.
Etiology and Treatment of Cicatricial Stenosis of Larynx and Trachea. F. A. Figi.—p. 17.
Experience in Extraction of Ureteral Calculi with Balkus Looped Catheter. J. J. Nugent.—p. 26.
Plastic Operations in Hysterectomy. O. S. Cofer.—p. 31.
Management of Breast Tumors: Review of 119 Cases. W. C. Jones. —p. 36.
Carcinoma of Breast. K. F. Kesmodel.—p. 43.
Some Recent Experiences with Vitamins and Vitamin Deficiencies. T. D. Spies.—p. 46.
Farm Practices Influencing Incidence of Multiple Sclerosis. J. A. Shield.—p. 55.
Advanced Allergic Emphysema. I. S. Kahn.—p. 62.
World Health Organization. L. L. Williams Jr.—p. 66.
Laboratory Controls in Relation to Penicillin and Streptomycin Therapy. J. A. Kolmer.—p. 72.
Two Year Follow-Up on One Quarter of 1944 Epidemic of Poliomyelitis in Kentucky. C. F. Wood.—p. 76.
Effect of Para-Aminobenzoic Acid in Rickettsial Diseases. N. A. Tierney.—p. 81.

Transthoracic Vagus Resection in Peptic Ulcer.—Smith and his associates report the effect of transthoracic vagus resection on the first 50 patients treated by this method at Duke Hospital. Forty-three of the 50 patients have made a complete clinical recovery to date and have been able to consume a full and unrestricted diet without ill effect. The most constant effect of vagus resection is decreased gastric motility. Gastric retention and dilatation are likely to occur in patients who have not had a previous gastroenterostomy. Vagus resection is usually followed by decrease in volume and acidity in gastric secretion. The relief of pain following vagus resection probably is the result of decreased gastric motility rather than decreased acidity. The time interval is too short to draw conclusions as to the permanent value of the procedure.

Surgery, Gynecology and Obstetrics, Chicago

84:1-106 (Jan.) 1947

*Experimental Study in Wound Healing in Vitamin C Depleted Human Subjects. J. A. Wolfer, C. J. Farmer, W. W. Carroll and D. O. Manshardt.—p. 1.
Excretion and Concentration of Penicillin and Streptomycin in Abnormal Human Biliary Tract: I. Gallbladder. J. Zaslow, V. S. Counseller and F. R. Heilman.—p. 16.
Total Gastrectomy for Carcinoma of Stomach. W. P. Longmire Jr. —p. 21.
*Complications Following Use of Cotton as Suture Material. R. C. Derbyshire.—p. 31.
*Evolution of Adenomas of Large Intestine and Their Relation to Carcinoma. E. B. Helwig.—p. 36.
Surgical Fusion of Vertebral Articular Facets: Technic and Instruments Employed. H. W. Meyerding.—p. 50.
Axillary Approach to Schede Thoracoplasty. A. Lambert.—p. 55.
Hemorrhoidectomy Eliminating Use of Clamp. V. T. Young.—p. 62.
Surgical Correction of Nasal Deformities. L. T. Byars.—p. 65.
Carcinoma of Vulva: Results of Treatment and Effect of Special Factors on Results. F. R. Smith and R. S. Pollack.—p. 78.
Medullary Nailing of Fractures of Long Bones. W. R. MacAusland. —p. 85.
Total Cystectomy by Combined Perineoabdominal Method. S. F. Wilhelm.—p. 90.
Split Thickness Graft—Useful Adjunct in Tube Pedicle Preparation. W. B. Macomber and H. S. Patton.—p. 97.
Ganglioneuroma of Sympathetic Nervous System. A. P. Stout.—p. 101.
Plantar Neuromas, Morton's Toe. W. H. Bickel and M. B. Dockerty. p. 111.
Anterior Transplantation of Posterior Deltoid for Shoulder Palsy and Dislocation in Poliomyelitis. P. H. Harmon.—p. 117.

Wound Healing in Vitamin C Depleted Human Subjects.—Wolfer and his associates had the opportunity to study the effect on wound healing of a prolonged vitamin C deficiency in 9 otherwise normal healthy young men. They found that depletion delays the development of tensile strength in an uncomplicated healing wound from three to five days up to the fourteenth postoperative day. When circumstances for healing are poor, such as in the presence of undue wound tension or diminution in blood supply, this depletion in ascorbic acid is made more evident through gross failure of primary wound healing. The incidence of wound infection under such circumstances suggests the need for ascorbic acid in the tissues for maximum resistance to infection. Human subjects on prolonged ascorbic acid depletion exhibit lack of collagen and reticulum in their healing wounds.

Cotton as Suture Material.—Derbyshire reviews observations on 372 operations in which cotton suture material was employed. There were 17 cases with late complications attributable to the suture material. Of these, 9 were serious and 8 mild. Complications were present more frequently in the earlier than in the later cases in the series, and it is suggested that this may be due to improvement in technic in the later cases as well as to the fact that the use of cotton was finally given up in cases of obvious infection or contamination. While cotton is an excellent suture material, it is not entirely without hazards and has definite limitations.

Adenomas of the Large Intestine and Their Relation to Carcinoma.—This report is based on a study of 1,460 consecutive necropsies in which the entire large intestine was available for examination. Helwig shows that adenomas of the large intestine are true neoplasms. Their incidence increases with age. Adenomas are more common in the white race than in the Negro race. Adenomas are slightly more frequent in men than in women, but single adenomas are more common in women than in men. Multiple adenomas are as common in the fourth decade as in the eighth decade of life in patients who have adenomas. Inflammation, hemorrhage and hemosiderin are commonly observed in the larger adenomas. Adenomas of the large intestine may undergo malignant transition. Both adenoma with malignant transition and carcinoma are more common in the older age groups. Some carcinomas of the large intestine arise directly from the mucous membrane, but the majority develop in adenomas.

84:129-194 (Feb.) 1947

*Carcinoma of Corpus Uteri: End-Results of Treatment in 531 Cases from 1926-1940. H. C. Taylor Jr. and W. F. Becker.—p. 129.
Excretion and Concentration of Penicillin and Streptomycin in Abnormal Human Biliary Tract: II. Hepatic Bile. J. Zaslow, V. S. Counseller and F. R. Heilman.—p. 140.
Effect of Radiation on Vaginal Cells in Cervical Carcinoma: I. Description of Cellular Changes. Ruth M. Graham.—p. 153.
Id.: II. Prognostic Significance. Ruth M. Graham.—p. 166.
Pathologic Physiology of Biliary Drainage: Use of New Type of T-Tube and the Criteria for Its Removal. J. M. McGowan, J. K. Keeley and F. Henderson.—p. 174.
Certain Pelvic Tumors Associated with Ascites and Hydrothorax. M. Calmenson, M. B. Dockerty and J. J. Bianco.—p. 181.
Surgical Substitutions for Losses of External Ear: Simplified Local Flap Method of Reconstruction. J. B. Brown, B. Cannon, C. Lischer, W. B. Davis and A. Moore.—p. 192.
Reconstruction of Esophagus by Skin-Lined Tube. T. W. Stevenson. —p. 197.
Some Observations on Wound Healing: Clinical Study, with Note on Topical Chemotherapy and Secondary Closure. J. M. Farris and T. B. Jones.—p. 203.
Masculinizing Tumors of Ovary: Clinicopathologic Survey with Discussion of Histogenesis and Report of 3 Cases. L. Iverson.—p. 213.
Technic of Thyroidectomy. A. H. Noehren.—p. 239.
*Resection of Clavicle, with Particular Reference to Use of Bone Chips in Periosteal Bed. H. B. Shumacker Jr.—p. 245.

Carcinoma of Corpus Uteri.—The series reviewed by Taylor and Becker includes all histologically proved carcinomas of the corpus uteri in patients admitted to the Memorial Hospital, New York, during the fifteen year period from 1926 to 1940. There were a total of 531. The effect of the gross extent of the disease on the rate of cure is shown by the five year end results in five specified groups. Whereas in the first group, in which the uterus was not enlarged, the rate was 66⅔ per cent, it was only 11.2 per cent in the last group, in which carcinoma extended beyond the uterus. The effect of histologic type is shown by the five year end results in three classifications: adenocarcinoma grades 1 and 2, 47.2 per cent; adenocarcinoma grades 3 and 4, 22.8 per cent; adenoacanthoma, 51.3 per cent. For the patients on whom hysterectomy was performed a five year cure rate of 51.1 per cent was shown, while in the group of patients treated only with radiation the figure was 36.8 per cent. The group with treatment limited only to radiation contained, however, more patients in a relatively advanced stage of the disease. The question of whether the cure rate from hysterectomy is increased when radiation is given in addition could not be answered.

Resection of Clavicle.—Shumacker shows that the manner in which the bony defect has been handled after resection of the clavicle has varied. The results of subperiosteal resection and discarding of the segment have been excellent in some cases, but in others regeneration has been slow. It seemed desirable to hasten the process of bony regeneration. With this in mind a small group was treated by filling the periosteal bed with bone chips secured from the excised segment of clavicle. Experiences are reported in 4 cases of clavicular resection in which rapid and complete restoration of bony continuity followed replacement in the periosteal bed of such bone chips.

Surgery, St. Louis

21:1-154 (Jan.) 1947

Abdominal Surgery in Evacuation Hospital: Experience with 335 Abdominal Injuries in Campaign in Northern Europe. R. W. Pearson, J. E. Tuhy and C. S. Welch.—p. 1.

*Perforated Gastroduodenal Ulcer. A. La Mont Baritell.—p. 24.

Intussusception of Excluded Distal Ileum with Spontaneous Expulsion per Anum of Sequestrated Intussusceptum. E. O. Finestone.—p. 34.

*Intermittent External Biliary Drainage for Relief of Pruritus in Certain Chronic Disorders of Liver. R. L. Varco.—p. 43.

Splenectomy: Analysis of 38 Cases. J. F. Tanna.—p. 46.

Fatal Hemolytic Reaction Following Transurethral Resection of Prostate Gland: Discussion of Its Prevention and Treatment. C. D. Creevy and E. A. Webb.—p. 56.

Hypermobility of Bones Due to "Overlengthened" Capsular and Ligamentous Tissues: Cause for Recurrent Intra-Articular Effusions. C. J. Sutro.—p. 67.

Vascular Wounds: Report of a Series of 108 Cases Encountered in Forward Evacuation Hospital.—p. 77.

Practical Points in Wolfe Graft Technic. D. W. Macomber and S. K. Wynn.—p. 86.

*Recurrent Parathyroid Adenoma: Case Report. L. B. Burk Jr.—p. 95.

Effects and Drawbacks in Use of Heparin in Retarding Menstruum. D. Weiner and K. Lange, with technical assistance of Florence T. Schein and S. Snyder.—p. 102.

Tantalum Scalp Sutures. C. H. Shelden, R. H. Pudenz and C. S. MacCarty.—p. 106.

New Suction Tube for Chest and Abdominal Operations. F. Gerbode.—p. 109.

Intestinal Obstruction Due to Perforations of Gallbladder: Analysis of 41 Cases of Perforated Gallbladder in 11 of Which There Was Associated Intestinal Obstruction. A. Blain and H. N. Harkins.—p. 110.

Perforated Gastroduodenal Ulcer.—Baritell reviews observations on a group of 88 patients who were operated on for perforated gastric and duodenal ulcers with a mortality rate of 1.1 per cent. A technic of operative treatment, consisting in applying an omental patch to the perforation without any attempt at closure, has been applied to 20 patients with uniform success. It is now the routine at the author's service in all cases and is strongly recommended in any patient in whom there is severe edema or induration about the perforation. Rapid diagnosis and therapy together with chemotherapy and the application of sound surgical principles has resulted in a very low death rate for a disease which heretofore has carried a formidable mortality rate.

Biliary Drainage for Relief of Pruritus.—Varco points out that in certain chronic disorders of the hepatic parenchyma or the intrahepatic biliary system intractable itching is an unpleasant feature. Dihydroergotamine controls the pruritus for only a short while. If the abnormal retention of bile salts is the cause of the pruritus, relief from the itching may be anticipated if it is possible to reduce this concentration in the circulation. Intermittent external biliary drainage suffices to attain and maintain prompt and virtually complete relief from this type of pruritus. Seven operations have been performed on 6 patients without fatality. Circuiting the bile to the outside for short intervals daily has sufficed to keep these persons comfortable. Chronic hepatic disease, either hepatitis or cirrhosis, has been the preoperative diagnosis for all these patients. Pruritus associated with acute hepatitis is so frequently a self-limited disease that surgical procedure for its relief would seem unwarranted.

Recurrent Parathyroid Adenoma.—At operation on a man for a parathyroid adenoma a fragment of the adenoma had become transplanted between the strap muscles of the neck. Two years later the patient returned with manifestations of hyperparathyroidism and a recurrent adenoma at the site of the graft. Burk states that recurrence apparently resulted from proliferation of the transplant. The original tumor was a parathyroid adenoma. It presented no characteristics of malignancy except for penetration of the capsule. In the recurrent tumor, however, some of the cells were less typical, there was no encapsulation, and strands of cells were found between muscle bundles. The pathologists are of the opinion that this tumor should not be diagnosed as carcinoma. While there are mild pleomorphic and hyperchromatic changes in some of the cells, the tumor is still of a well differentiated type.

United States Naval Med. Bulletin, Washington, D. C.

47:1-218 (Jan.-Feb.) 1947. Partial Index

Some Future Policies of Medical Department of the Navy. C. A. Swanson.—p. 1.

Notes on Spinal Anesthesia for Interns Using Procaine, or Novocain. A. M. Brooks.—p. 23.

Psychometric Examinations Aboard Destroyer. A. M. Bongiovanni.—p. 27.

Laboratory Diagnosis of Diphtheria. D. D. Albers.—p. 33.

Diabetes Mellitus in a Naval Hospital: Review of 50 Consecutive Cases. J. J. Furlong.—p. 42.

Research in the Naval Hospital. H. M. Hildreth.—p. 52.

Description of Disqualifications of Enlisted Applicants for Submarine Training. C. W. Shilling and N. R. Bartlett.—p. 59.

Epidemic of Prickly Heat on Aircraft Carrier. G. B. Ribble, W. S. Luedemann and S. M. Peabody.—p. 77.

Technic of Local Use of Penicillin in Operative Treatment of Chronically Infected Ingrown Toenails. C. P. Lape.—p. 90.

Wisconsin Medical Journal, Madison

46:1-192 (Jan.) 1947

Procedures for Service Under Wisconsin Veterans Medical Service Agency. T. J. Doran.—p. 31.

Relation of Veterans Administration to WVMSA. W. C. Liefert.—p. 38.

Relation of Wisconsin Department of Veterans Affairs to WVMSA. L. B. Levenick.—p. 42.

46:193-292 (Feb.) 1947

Diphtheritic Heart Disease. M. J. Lustok.—p. 215.

*Allowing Young Children to Set Their Own Pace: Building Human Efficiency. C. A. Aldrich.—p. 225.

Carcinoma of Prostate Gland, a Reevaluation. C. R. Marquardt.—p. 229.

Allowing Young Children to Set Their Own Pace.—Aldrich shows that much of our modern child care is calculated to prevent our youngest generation from "doing its stuff." Infants are hemmed about with strict prohibitions. The author emphasizes the fact that the proposed liberalized or flexible routines, since they are designed to synchronize with infant physiology, make for greater efficiency in the organism. He outlines some of the many ways in which children try to develop through their own mechanisms. He pictures infants as dynamic, purposeful people who, if allowed to progress when they are ready for each step, will become more and more efficient in the art of living.

Yale Journal of Biology and Medicine, New Haven

19:235-392 (Jan.) 1947. Partial Index

Problem of Specificity in Growth and Development. P. Weiss.—p. 235.

Three Potentials. H. S. Burr.—p. 311.

Androgen and Anaplasia. C. Huggins.—p. 319.

*Comparative Statistical Studies of Epidemics of Poliomyelitis In and About the City of New Haven, 1916 to 1943. H. A. Wenner.—p. 331.

Epidemics of Poliomyelitis in New Haven.—Wenner made comparative studies on four epidemics of poliomyelitis which occurred in and about the city of New Haven between 1916 and 1943. It was found that a change has occurred in the age incidence of poliomyelitis in New Haven. Prior to 1920 children less than 5 years of age were attacked almost twice as frequently as those aged 5 to 9 and five times as often as older children 10 to 14 years of age. The ratio of cases in these three age groups in 1935 and in 1943 was 1:1:0.7. The seasonal distribution of poliomyelitis during the four epidemics varied slightly. The peak occurred in August or September.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Experimental Pathology, London

27:349-434 (Dec.) 1946

Production of Antibiotics by Fungi: Part II. Production by Fusarium Javanicum and Other Fusaria. H. R. V. Arnstein, A. H. Cook and M. S. Lacey.—p. 349.
Note on a Variant of B. Anthracis Which Fails to Form Heat Resisting Endospores and on Attempts to Immunize Guinea Pigs Against Anthrax Infection with Killed Vaccines Prepared from It. P. B. White.—p. 356.
*Components of Serum Proteins in Infective Hepatitis and in Homologous Serum Jaundice (An Electrophoretic Study). N. H. Martin.—p. 363.
Preparation and Use of Colloidal Gold Sols as Diagnostic Agents. N. F. Maclagan.—p. 369.
Antibiotic from Bacterium Coli. N. G. Heatly and H. W. Florey.—p. 378.
Preservation of Mammary Tumor Agent by Desiccation of Breast Tumor Tissue of Mice. L. Dmochowski.—p. 391.
Immunity to Anthrax: Protective Antigen Present in Cell Free Culture Filtrates. G. P. Gladstone.—p. 394.
Adaptation of "Nitratase" in Washed Suspensions of Bacteria. M. R. Pollock.—p. 419.

Serum Proteins in Infective Hepatitis.—Martin made serial electrophoretic examinations of the serum proteins in 11 patients (8 males and 3 females) with uncomplicated infective hepatitis. He noted depression of the albumin component, with a corresponding rise of gamma globulin. There was disturbance of the alpha and beta globulin, notably between the fourteenth and thirtieth days. It was greatest in 2 patients the course of whose infections was relapsing. A breakdown in the beta complex was noted in certain serums, but it appeared to have no diagnostic significance. The results obtained are in no way peculiar to infective hepatitis. Similar patterns have been obtained in infective mononucleosis, in lupus erythematosus and in other conditions. They are not, therefore, an absolute diagnostic aid. Their value lies in forming a base line for further studies of the administration of protein fractions in the treatment and in assessing the effect of those fractions, if any, on the plasma proteins.

British Journal of Ophthalmology, London

31:1-64 (Jan.) 1947

Removal of Wrong Eye. H. M. Traquair.—p. 8.
Intraocular Foreign Body: Series of 72 Cases in B. L. A. H. B. Stallard.—p. 12.
*"Blue Halos" in Atabrine Workers. Ida Mann.—p. 40.
Subjective "Lightning Streaks." R. F. Moore.—p. 46.
Survey of Results of Lacrimal Stricturotomy. I. Lloyd.—p. 51.

"Blue Halos" in Atabrine Workers.—Mann directs attention to a new industrial disease of the cornea which occurs in workers who handle atabrine (quinacrine) and seems to be caused by an intracellular deposit of an insoluble derivative of atabrine. Its only symptom is the seeing of colored halos (mostly blue) round lights. The prognosis is excellent on removal from contact with atabrine dust.

British Journal of Urology, London

18:165-228 (Dec.) 1946

Gunshot Wounds of Ureter: Three Cases, with Preservation of Kidney in Two. J. Everidge and D. R. Barnes.—p. 166.
Physiologic Variations in Pyelograms Commonly Interpreted as Pathologic: Revised Standard of Normality, with Special Reference to "Cystoid" Theory. R. C. Begg.—p. 176.
Urethrotrigonitis in Relation to Abacterial Pyuria. S. M. Vassallo.—p. 189.

British Medical Journal, London

1:41-78 (Jan. 11) 1947

Value of Penicillin in Surgery. G. A. G. Mitchell.—p. 41.
*Review of Dietetic Factors in Liver Disease: II. Application of Nutritional Principles in Treatment. L. J. Witts.—p. 45.
*Surgical Aspects of Roundworm Disease. F. Barber.—p. 49.
Mesenteric Vascular Occlusion. E. W. Bintcliffe.—p. 50.
Myopathy with Spina Bifida. R. G. Paley.—p. 53.

Dietetic Factors in Liver Disease.—Witts emphasizes that disorders of the liver similar to those produced in experimental animals by dietary deficiency occur in man over wide territories of the world as a result of inadequate food supplies. The incidence of juvenile cirrhosis and primary carcinoma of the liver may well come to be regarded as indexes of nutrition. The problem must now be attacked by social engineering rather than medical science. The number of isolated dietary defects which are known to produce disease is already great, but we are not yet able to permute and combine the various factors so as to discover how they reinforce or neutralize one another. It seems unlikely that fortification with individual principles will be as cheap or as effective as a general improvement of the diet. Our knowledge is more likely to be useful in the selection of those natural foods which can be most expeditiously used to increase the biologic value of the diet.

Surgical Aspects of Roundworm Disease.—Barber says that as a surgeon to the native population of Cyrenaica he repeatedly encountered roundworm infection that simulated surgical conditions. Roundworm infection may become of surgical importance not only by causing mechanical obstruction of the small intestine but by producing inflammatory changes. It is usually difficult to distinguish this variety of inflammation. Correct diagnosis will be facilitated if in regions with prevalent roundworm infection the physician will bear that possibility in mind, using also the laboratory methods for investigation. Surgical treatment will have to consider removal of as many worms as possible from the bowel by "milking" them from adjoining loops toward an incision made over their biggest accumulation. At times the prognosis seems to depend to a considerable extent on the thoroughness with which the worms were removed during the operation.

1:79-124 (Jan. 18) 1947

Endocrines in Gynecology. A. Bourne.—p. 79.
Volvulus of Cecum. R. H. Gardiner.—p. 83.
*Heart in Rheumatoid Arthritis. A. S. Rogen.—p. 87.
Incidence of Yaws and of Venereal Diseases in Lango (Uganda). C. J. Hackett.—p. 88.
Effect of Organic Mercurial Preparations on Diseases of Skin. E. A. J. Byrne.—p. 90.

Heart in Rheumatoid Arthritis.—According to Rogen rheumatic fever and rheumatoid arthritis are generally regarded as distinct diseases which have much in common. The possibility of their having a common etiology has often been discussed. As cardiac lesions are characteristic of rheumatic fever, many workers have sought similar lesions in rheumatoid arthritis. The author records the results of a detailed examination of the cardiovascular system in 33 consecutive cases of rheumatoid arthritis in municipal hospitals in Glasgow. Among these only 1 was found to have a cardiac lesion which might have been attributable to the disease. Another patient was found to have neither histologic nor naked-eye abnormalities of the heart at necropsy.

Journal of Pathology and Bacteriology, Edinburgh

58:325-608 (July) 1946. Partial Index

Shape and Motility of Bacteria. A. Pijper.—p. 325.
Preparation and Use of Simple Culture Medium for Leptospira. R. D. Stuart.—p. 343.
Bactericidal Power of Blood for Infecting Organism in Bacteremia. O. Khairat.—p. 359.
*Morphologic Changes in Red Cells in Relation to Severe Burns. A. Brown.—p. 367.
Standardization of Scrub Typhus Vaccine. A. Henderson-Begg and F. Fulton.—p. 381.
Microbic Dissociation in C. Diphtheriae by Production of Daughter Colonies. H. S. Carter.—p. 391.
Morphologic Equivalents in Polyarthritis Rheumatica, Periarteritis Nodosa ,Transient Eosinophilic Infiltration of Lung and Other Allergic Syndromes. H. Bergstrand.—p. 399.
Pathologic Changes Induced by Lewisite and Allied Compounds. G. R. Cameron, H. M. Carleton and R. H. D. Short.—p. 411.
Account of Pathology of Some Cases of Clostridia Welchi Infection. A. D. T. Govan.—p. 423.
Pathology of Simple Gastritis. H. A. Magnus.—p. 431.
Inhibition of Various Clostridia by Penicillin in Human Serum. R. W. N. L. Ross.—p. 441.
Absorption of War Gases by Nose. G. R. Cameron, J. H. Gaddum and R. H. D. Short.—p. 449.
Lower Accessory Pulmonary Artery with Intralobar Sequestration of Lung: Report of 7 Cases. D. M. Pryce.—p. 457.
Monocytic Leukemoid Reaction Associated with Tuberculosis and Mediastinal Teratoma. Anne Gibson.—p. 469.
Effect of Penicillin on Tubercle Bacillus. C. N. Iland.—p. 495.
Disseminated Parenchymatous Ossification in Lungs in Association with Mitral Stenosis. A. Elkeles and L. E. Glynn.—p. 517.

Red Cell Changes in Severe Burns.—Investigation of the morphologic changes occurring in the red cells of 3 severely burned patients revealed that fragmentation of the red cells and microspherocytosis occur within a few hours of the injury.

Microspherocytosis was seen in stained films and was shown to be associated with an increase in the mean corpuscular average thickness. Fragmentation of the red cells was most obvious in the most severely burned patient and was associated with hemoglobinemia and hemoglobinuria. These morphologic changes can be attributed to the direct action of heat on the cells. The maximum effect is immediate fragmentation and destruction. If the damage is less severe, microspherocytosis is produced and the cells are unduly susceptible to the physiologic trauma of the circulation.

Journal of Physiology, Cambridge

105:299-398 (Jan.) 1947. Partial Index

Rate and Site of Acetate Metabolism in Body. D. H. Smyth.—p. 299.
Color Sensitivity of Retina Within Central Fovea of Man. L. C. Thomson and W. D. Wright.—p. 316.
Ferricyanide Method of Blood-Gas Analysis. F. C. Courtice and C. G. Douglas.—p. 345.
Experiments on Liver Sympathin. J. H. Gaddum and L. G. Goodwin.—p. 357.
Action of Chemical Vesicants on Cholinesterase. R. H. S. Thompson.—p. 370.
*Vitamin A and Bone Growth: Reversibility of Vitamin A Deficiency Changes. E. Mellanby.—p. 382.

Vitamin A and Bone Growth.—Mellanby points out that a deficiency of vitamin A in the diet of growing animals causes widespread nerve degeneration. A cause of this degeneration was suggested when the examination of serial sections of the labyrinth and its capsule revealed that vitamin A deficiency results in a large bone hypertrophy which injures or destroys the nerve fibers and the cells of the spiral ganglion by pressing on the eighth nerve. The chief point of interest in this publication is the study of the reparative or recovery stage of bone growth, especially of the cranial bones, when vitamin A is restored to an animal after a period of deficiency. The addition of vitamin A to the diet of an A-deficient animal during growth brings about a return of osteoclastic and osteoblastic activity to the surfaces where it is normally found. Although vitamin A deficiency causes a general thickening and dysplasia of bone by its effect on osteoclasts and osteoblasts, the method of producing this abnormal state varies, as is shown in the three regions discussed, namely the basioccipital, the periosteal bone covering the labyrinth, and the sphenoid bone in relation to the optic foramen. The recovery changes on adding vitamin A are also different in different cases. The altered shape of bones adjacent to the nervous system may destroy cranial and spinal nerves and exert other harmful effects, but the recovery changes in dysplastic bone on the addition of vitamin A to the diet take place independently of the condition of the adjacent nerve or nervous tissue.

Lancet, London

1:49-88 (Jan. 11) 1947

Rest versus Activity in Treatment of Fracture. G. Perkins.—p. 49.
*Acute Porphyria. J. Jørgensen and T. K. With.—p. 54.
*Rubella as Cause of Congenital Deafness in England. E. Clayton-Jones.—p. 56.
Duct Papillomata of Breast. C. Wakeley.—p. 62.
*Penicillin in Agranulocytic Angina: Report of Case. I. A. R. Mackenzie.—p. 63.
Staphylococcal Food Poisoning by Meat-Pie Jelly. F. A. Belam.—p. 64.

Acute Porphyria.—Jørgensen and With review recent progress in the knowledge of porphyria and emphasize that there is evidence that barbiturates exert a harmful effect on patients with porphyria, even when it is latent. Two cases illustrating this effect are reported.

Rubella as Cause of Congenital Deafness.—Clayton-Jones says that an inquiry has been made in schools for the deaf in England to ascertain whether the association established in Australia between maternal rubella in the first three months of pregnancy and congenital defects, mainly cataract, deaf-mutism and heart lesions, could be confirmed. At one school with 18 children 8 mothers gave a definite and 1 a probable history of rubella in the second to fourth months of pregnancy. In three larger schools a maternal history of rubella in pregnancy was obtained in 11 out of 123 children. Deaf children with a maternal history of rubella were found to have a bilateral, incomplete, inner ear deafness usually fairly uniform throughout frequency range. Difficulty in feeding during infancy was commonly reported, and examination showed a tendency to deformity of the jaw, pigeon chest and atonic musculature; no cataract or heart lesion was detected. Notifications at Manchester show that the rubella epidemic of 1940 was peculiar in involving an unusually high proportion of young women. An attempt should be made to protect pregnant women against rubella in the first four months of pregnancy.

Penicillin in Agranulocytic Angina.—Mackenzie observed a prisoner of war in whom the appearance of the blood film, considered in conjunction with the profound leukopenia, suggested an aleukemic leukemia of the monocytic type; in view of the throat condition, however, the diagnosis of agranulocytosis was preferred. The question then arose whether it was wiser to attempt to raise the polymorphonuclear leukocyte count with pentnucleotide or to attack the infection with penicillin. The patient's rapid improvement in both physical condition and leukocyte count seems to show that the latter course was correct.

Medical Journal of Australia, Sydney

2:889-920 (Dec. 28) 1946

*Final Observations on Congenital Defects in Infants Following Infectious Diseases During Pregnancy, with Special Reference to Rubella. C. Swan, A. L. Tostevin and G. H. B. Black.—p. 889.

1:1-32 (Jan. 4) 1947

Australasian Anophelines as Vectors of Malaria. I. M. Mackerras.—p. 1.
Inguinal Hernia. J. C. B. Allen.—p. 8.

Defects in Infants Following Infectious Diseases During Pregnancy.—Swan and his associates say that of 61 children comprising their first and second series they were able to reexamine 49. The most important result of the resurvey was the detection of 4 further cases of deaf-mutism. In 1 patient spontaneous absorption of a cataractous lens had occurred. Many of the children were retarded in their physical development. A fourth series consisting of 25 cases was studied. In 17 instances (1 doubtful) the mother had contracted rubella in pregnancy. In 1 case the mother had suffered also from chickenpox. Fifteen of the babies born subsequently exhibited congenital defects. The abnormalities included cataract, deaf-mutism, heart disease, microcephaly, umbilical hernia, bifid uvula, mental deficiency, epilepsy, speech defect and concomitant strabismus. Thirteen of the 15 mothers had suffered from German measles during the first four months of pregnancy. Of 2 infants that were free from congenital malformations, one mother had suffered from the disease in the first month and the other in the seventh month of gestation.

Transactions Roy. Soc. Trop. Med. and Hyg., London

40:205-356 (Dec.) 1946

Atebrin Susceptibility of Aitaipe-Wewak Strains of P. Falciparum and P. Vivax. N. H. Fairley.—p. 229.
*Control of Plague by Means of Live Avirulent Plague Vaccine in Southern Africa (1941-1944). E. Grasset.—p. 275.
Transmission of Dengue Fever by Aedes (Stegomyia) Scutellaris Walk. in New Guinea. I. M. Mackerras.—p. 295.
Etiology of Desert Sore. S. T. Anning.—p. 313.
Heterophile Antibodies in Trypanosomiasis. A. Henderson-Begg.—p. 331.
Tsetse Fly Repellents. G. M. Findlay, J. Hardwicke and A. J. Phelps.—p. 341.
Growth of Protozoa in Tissue Culture: III. Trypanosoma Cruzi. F. Hawking.—p. 345.

Control of Plague by Live Vaccine.—Grasset reviews observations made in southern Africa on antiplague immunization with live avirulent vaccine in fourteen plague outbreaks between 1941 and 1944. He stresses the harmlessness of the method, which was evidenced by the absence of untoward reactions in over 40,000 doses used in preventive mass immunizations of European and native populations. The vaccinal reactions were mild. A high degree of specific protection developed rapidly following immunization. A total of 15 cases with 7 deaths were observed among over 24,000 persons immunized during nine bubonic and septicemic, three pneumonic and two mixed bubonic pneumonic and septicemic outbreaks. Protection derived from immunization begins to be effective from the fifth day after inoculation, reaching full benefit toward the tenth day after inoculation. The author concludes that a single live avirulent plague inoculation (1,000 million organisms) with usual antiplague measures realizes a safe, easily applicable, well accepted and efficient mass plague control method in the epidemiologic field conditions existing in South Africa.

Presse Médicale, Paris

54:881-892 (Dec. 28) 1946. **Partial Index**

Penicillin Therapy and Obstetric Surgery. L. Portes, M. Mayer and A. Granjon.—p. 881.
Pleuropulmonary and Pseudoperitoneal Form of Epidemic Myalgia. R. Bogaert.—p. 881.
Utilization of Animal Plasma or Serum in Human Subjects. Georgette Cordier and J. Demirleau.—p. 883.
*Treatment of Chronic Rheumatism with Organic Salts of Copper. J. Forestier and A. Certonciny.—p. 884.

Organic Salts of Copper in Chronic Rheumatism.—Forestier and Certonciny used a cupro-allyl-thio-urea-benzoate of sodium which contains 19 per cent of copper in 50 cases of various forms of rheumatism. The preparation is administered twice weekly by intravenous injection. At each injection 0.25 Gm. is usually administered, but recently 0.5 Gm. has been given. The total dose in one series of injections varies between 2.5 and 5 Gm. The intervals between series are from one to three months. The intravenous mode of administration is painless, whereas the intramuscular injection is extremely painful. The substance does not exert toxic effects on the liver or kidney or on the blood or the hemopoietic organs or the skin or mucous membranes. Fatigue and loss of weight were observed in some patients at the end of the series but disappeared rapidly. As regards the action of the organic copper compound, the authors say that it acts quicker and better than do the gold salts.

Schweizerische medizinische Wochenschrift, Basel

76:1273-1300 (Dec. 14) 1946. **Partial Index**

Roentgenologic Aspects of Pancreatic Disorders. M. Lüdin.—p. 1273.
*Diphtheria Carriers: Their Frequency and Treatment. H. Reber.—p. 1275.
Therapy of Agranulocytosis in Tonsillogenic Infection. H. Cadotsch. —p. 1279.

Diphtheria Carriers.—Reber shows that in searching for carriers of diphtheria bacilli the culture medium on tellurite will be a favorable substitute for mediums previously used. In order to detect as many carriers as possible in an isolated community a minimum of three samples must be collected at intervals of two days. If this is done an average of 6 per cent of carriers are detected in an environment that is free from diphtheria. In children between 3 and 6 years of age the number of carriers is double the average; after that it decreases with age, but in every age group some are found. If an epidemic of diphtheria is feared, it is necessary to treat all persons harboring bacilli with the morphologic characteristics of diphtheria bacilli, since there is no reliable and rapid criterion of pathogenicity. On the basis of experiences with various therapeutic methods, the author says that the local application of penicillin is most effective and represents the method of choice in bacillus carriers. Medical treatment has permitted a considerable reduction of the number of tonsillectomies, this operation being performed only when the general condition of the patient requires it, and when the tonsils constitute a focus of infection.

Arch. Soc. Argent. Anat. N. y Pat., Buenos Aires

8:5-162 (Oct.) 1946. **Partial Index**

*Mammary Sarcoma in Women. D. Brachetto-Brian.—p. 35.

Mammary Sarcoma in Women.—Brachetto-Brian performed 10,000 pathologic examinations during a period of sixteen years in the Durand and Ramos Mejia Hospital. He found 350 mammary tumors, of which 212 were malignant. Among the 212 malignant ones there were 207 carcinomas and 5 sarcomas, namely a reticulum cell sarcoma with giant cell formation, primary in the breast, in which its rapid growth led to the diagnosis of acute cancer; 1 fibroblastic sarcoma of seven months' duration in a woman aged 30, situated immediately behind the gland, which is included because it was impossible to establish its independence from the gland; 2 cases of secondary adenofibrosarcoma, 1 of them recurrent, both of which had arisen in a "cystosarcoma phyllodes" (Müller) or "giant intracanalicular myxoma of the breast" (Lee and Pack), and a secondary adenofibrosarcoma arising in a fibroadenoma.

Revista de Gastroenterol. de Mexico

11:1-44 (Jan.-Feb.) 1946. **Partial Index**

*Abdominovenous Direct Transfusion of Ascitic Liquid in Hepatosplenic Cirrhosis. A. Acevedo Olvera.—p. 27.

Transfusion of Ascitic Liquid in Ascitic Cirrhosis.—Acevedo Olvera based this treatment on the facts that (1) in patients with ascitic cirrhosis of the Laënnec or Banti type the plasma proteins are low, whereas the proteins in the ascitic liquid are high, (2) proteins favor liver function and (3) they are absorbable by the peritoneum. He administered the ascitic liquid to 18 patients with that type of ascites. The liquid was injected directly from the abdomen intravenously by means of an apparatus for transfusion without any modification of the ascitic liquid but just as it was found in "free" ascites. The total quantity for an injection was from no definite figure up to 1,000 cc. The total amount administered varied from 2 to 10 liters. In 4 of the 18 patients the treatment began very late in the course of the disease. Five patients were cured; 3 are still under treatment. In the rest great improvement was noted. One of the patients had brucellosis as the cause of his Banti's syndrome. In general the treatment results in improving the opportunity of the patient for a more favorable reaction to the proper medical, biologic, vitamin and physical therapy in modern use as well as to the proper diet. The article is a preliminary report. The author concludes that the treatment is harmless. It improves the liver functions, is economical, is reliable and is indicated only in "free" ascites due to Laënnec's cirrhosis or Banti's syndrome.

Acta Pathol. & Microbiol. Scandinav., Copenhagen

23:293-378 (No. 4) 1946. **Partial Index**

*Method for Production of High Titer Tetanus Serum. A. W. Buer. —p. 293.
Observations on Salmonella Enteritidis Var. Danysz and Salmonella Enteritidis Var. Chaco in Man. M. Kristensen.—p. 299.
Anterior Pituitary and Parathyroids in Hypercalcemia: Comparison Between Hyperparathyroidism and Myelomatosis, with 2 Reported Cases of the Latter Disease. J. Mellgren and G. Lundh.—p. 330.
Sensitivity of Meningococci to Penicillin and Sulfathiazole in Vitro. A. Lundsteen.—p. 372.

Production of High Titer Tetanus Serum.—In producing tetanus serum Buer has tried a modification of Ramon's method of inoculation. Ramon injects an emulsion of olive oil, lanolin and tetanus toxin or anatoxin, which causes an inflammation infiltrate. The modification consists in the injection of the toxin into an already existing inflammation infiltrate three or four days after the injections of the aforenamed emulsion. By this means the titer has been doubled and multiplied. Titers of up to between 4,000 and 4,800 international units per cubic centimeter have been obtained.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

90:1767-1826 (Nov. 30) 1946. **Partial Index**

Creatinine Elimination in Urine of Patients with Hunger Edema. W. Radsma.—p. 1775.
*Therapy of Migraine. H. K. G. Bartstra.—p. 1786.
*Adenoma of Islands of Langerhans in Pregnancy. A. W. M. Pompen, C. A. L. Jansen and J. Dhont.—p. 1791.

Therapy of Migraine.—Bartstra says that patients subject to migraine experience great relief if given from 5 to 10 drops of dihydroergotamine three times daily. Equally favorable results were obtained by giving to women tablets containing an extract prepared from fresh testis tissues and to men tablets containing an extract of ovarian tissue. Treatment is begun by giving three times daily two tablets of the testicular or ovarian preparations. It is not known what factor exerts this favorable effect, since the sex hormone isolated from testis tissues exerts no particular influence on migraine. Thus another substance must be responsible. The frequency of the attacks decreases and the unpleasant sensations between the attacks are also favorably influenced.

Adenoma of Islands of Langerhans During Pregnancy.—Pompen and his associates present the history of a woman aged 35 who had hyperinsulinism as the result of an adenoma of the islands of Langerhans. She passed through two pregnancies after she developed the hyperinsulinism and was free from attacks of hyperinsulinism during the first of these pregnancies and during the second half of the second pregnancy. The attacks returned on the thirteenth and ninth days respectively after childbirth. It is suggested that the glycotropic or anti-insulin factor may play a part. Recent investigations indicate that this activity might be ascribed also to the corticotropic hormone. The hypophysis is thought to produce this substance in abundant quantities in the course of pregnancy.

Acta Oto-Laryngologica, Stockholm

34:521-620 (Nov.-Dec.) 1946. Partial Index

Peritonsillar Abscess and Mediastinitis. N. G. Richtnér.—p. 521.
Connection Between Osteomyelitis of Cranial Bones and Inflammatory Processes in Nose and Its Accessory Sinuses. A. de Kleyn.—p. 534.
*Etiology and Treatment of What Is Known as Rheumatic Facial Paralysis. E. Bergström.—541.
*Diseases of Ear Due to Louse Borne Typhus: (Experiences with 800 Cases of Typhus). J. Mérei.—p. 572.
Some Remarks About Physiopathology of Vestibular Apparatus. E. Wodak.—p. 593.
Experimental Histologic Studies on Labyrinth: X. Supplementary Remarks Concerning the Phenomena of Compression Observed on Intravital and Postmortem Fixation. S. H. Mygind and D. Dedering. —p. 609.

Rheumatic Facial Paralysis.—Bergström says that until recently the treatment of rheumatic facial paralysis, commonly called Bell's palsy, has consisted almost exclusively of simple physical treatments. However, since paresis and contracture or even total paralysis may develop after this conservative treatment, surgery is now being resorted to. A woman aged 35, who had had facial paralysis of the peripheral type on the right side for fifteen years, was cured by surgical intervention. In the course of a decompression operation a section of the facial canal was found to be contracted, which condition is assumed to have contributed to the paralysis. The author thinks that, since spontaneous healing takes place in most cases, operation should not be considered until four months has elapsed without signs of improvement.

Ear Symptoms in Louse Borne Typhus.—Observations on 800 cases of typhus revealed to Mérei that impairment of hearing occurred in from 60 to 65 per cent of the cases, usually in the early stage of the disease. Gradual recovery began after three weeks. As regards the vestibular system, the author says that ataxia with vertigo appeared in about 40 per cent of the cases. The vertigo was not due to fever. Past pointing, ataxia and spontaneous falling often were present up to the end of convalescence. Nystagmus appeared in from 6 to 8 per cent of the patients. The symptoms indicating involvement of the vestibular apparatus appear so early that they can be accepted as a reliable diagnostic sign for typhus.

Nordisk Medicin, Gothenburg

31:1719-1794 (Aug. 9) 1946. Partial Index

Fatal Pulmonary Embolism. H. Zilliacus.—p. 1719.
Treatment of Scabies. B. Heilesen and P. V. Marcussen.—p. 1722.
Health Control in Adults. E. Møller.—p. 1723.

Hospitalstidende

Diabetes Mellitus in Infants. E. Henriksen.—p. 1727.

Duodecim

Cancer of Breast and Pregnancy. K. Kettunen.—p. 1747.
Waterhouse-Friderichsen Syndrome. E. Klemola and R. Tammilehto. p. 1750.
Penicillin Therapy in Case of Simultaneous Gonorrhea and Primary Syphilis. T. Putkonen.—p. 1753.

Norsk Magasin for Lægevidenskapen

*Relation of Renal Tuberculosis to Primary Tuberculous Infection. H. J. Ustvedt.—p. 1755.

Hygiea

Nucleotide Metabolism of Dentine Cells Under Normal Conditions and in Vitamin C Deficiency. Å. Wilton and B. Thorell.—p. 1784.

Relation of Renal Tuberculosis to Primary Tuberculous Infection.—Ustvedt states that in over two thirds of 292 cases of renal tuberculosis treated during the last ten years the time between the primary tuberculous infection and the appearance of the renal tuberculosis was more than five years. Renal tuberculosis only occasionally represents disease of the isolated organ; it is more often a link in tuberculosis as a general disease. It manifests itself much later in the course of the tuberculous infection than most other tuberculous manifestations, is often preceded by one or more other localizations of tuberculosis and is not infrequently followed by other tuberculous involvement. It may be present a long time before clinical symptoms appear, and moderate changes may be stationary for years. Much of the pathogenesis of renal tuberculosis is uncertain. Various facts support the American and French conception of bilateral start of the disease with multiple foci localized in the cortex.

31:1795-1866 (Aug. 16) 1946. Partial Index

Vitamin Problems. J. Hagtvet.—p. 1795.
Vasodilating Agents. A. Harrestrup Andersen.—p. 1802.
Follow-Up of Male Diabetic Patients. D. Elstad.—p. 1807.

Hospitalstidende

Influence of Experimental Alcohol Intoxication on Deposit and Resorption of Vitamin D. H. Behrnts Jensen and O. Wanscher.—p. 1811.

Hygiea

*Congenital Hyperplasia of Islets of Langerhans with Increase in B Cells in Fetuses of Diabetic Mothers. G. T. Hultquist, Inga Lindgren and J. B. Galgaard.—p. 1841.

Congenital Hyperplasia of Islets of Langerhans in Fetuses of Diabetic Mothers.—Hultquist and his associates report 4 cases of pregnancy in diabetic mothers with death of the fetus immediately before or during delivery. In 1 instance the mother's carbohydrate tolerance improved during the last months of the pregnancy; in all cases the blood sugar rose after delivery or intrauterine death of the fetus. Microscopic examination of 3 of the fetuses showed hyperplasia of the islets of Langerhans, and study by silver impregnation revealed increase in the B cells in proportion to the number of A cells. There was fatty degeneration of the liver and less severe degeneration of the kidneys, together with increased glycogen content. The adrenals were hyperplastic and in 2 cases hyperemic.

31:1867-1930 (Aug. 23) 1946. Partial Index

Slight and Grave Instability in Lumbar Column in Disk Degeneration. F. Knutsson.—p. 1875.

Hospitalstidende

Takata-Ara Reaction as Liver Function Test and Simple Titration as Substitute. T. Grinsted.—p. 1879.
Postoperative Iodine Treatment in Thyrotoxicosis. Anne Marie Gade. —p. 1883.
Podophyllin Treatment of Condylomata Acuminata. D. Trolle.—p. 1886.

Norsk Magasin for Lægevidenskapen

*Perforating Gastric and Duodenal Ulcer in Vestfold District Hospital 1936-1944. R. Saxholm.—p. 1889.
Treatment of Tendon Lesions of Hand. J. Hertzberg.—p. 1893.
Follow-Up of Patients Operated on for Maxillary Sinusitis. H. Lindeman.—p. 1897.
Serum Iron in Leukemia, Malignant Lyphogranulomatosis and Polycythemia Vera (Erythremia). S. Dahl.—p. 1907.

Hygiea

Cases of Ethylene Glycol Intoxication. C. Widman.—p. 1921.
Ammonia Defense in Experimental Acidosis. B. Herner.—p. 1924.

Perforating Gastric or Duodenal Ulcer in Vestfold District Hospital, 1936-1944.—Of the 76 patients with perforating ulcer treated during this period 74 were men and 2 women, with the average age of 43. An increase in perforating ulcer occurred during the war. Saxholm states that resection is well borne by patients with perforation and gives better results than other operative methods. Resection was done in 64, suture in 11, suture and gastroenterostomy in 1. There were 10 deaths. The late results in 49 patients observed for from nine months to nine years show 27 well, 21 improved and 1 not improved; the results are better than the figures indicate, many patients classified as improved being on the borderline of cured. Because of the war information was not available on 17 patients. The mortality after resection was 6.2 per cent, while after 379 resections during the same period in ordinary ulcer without acute complications it was 4.7 per cent.

Book Notices

Neurosyphilis. By H. Houston Merritt, A.B., M.A., M.D., Professor of Clinical Neurology, College of Physicians and Surgeons, Columbia University, New York, Raymond D. Adams, M.A., M.D., Neuropathologist and Visiting Neurologist, Boston City Hospital, Boston, and Harry C. Solomon, B.S., M.D., Professor of Psychiatry, Harvard Medical School, Boston. Cloth. Price, $11. Pp. 443, with 58 illustrations. Oxford University Press, 114 5th Ave., New York 11, 1946.

This textbook on neurosyphilis is written from the interrelated points of view of the neurologist, neuropathologist and psychiatrist. The clinical and pathologic material on which it is largely based has been drawn from the three authors' extensive experiences at the Boston City Hospital and the Boston Psychopathic Hospital. Various sections of the book cover the clinical and pathologic aspects of the several types of neurosyphilis thoroughly and in logical sequence. Certain syndromes, e. g. syphilitic spinal spastic paraplegia (Erb), merit a more detailed consideration. Complete correlation between the clinical manifestations and the histopathology of such diverse syndromes as tabes dorsalis, dementia paralytica and the multiform lesions of meningovascular neurosyphilis is as yet not possible, but Merritt, Adams and Solomon have more closely approximated the correlation than have other authors lacking their combined breadth of view. The therapy of neurosyphilis is less adequately summarized. Notably lacking is any evaluation of the Dattner-Thomas concept of cerebrospinal fluid "activity" as determined by the cell counts and protein determinations. The usefulness of penicillin in the various syndromes of syphilis of the central nervous system is briefly discussed. This drug has proved to be less efficacious in primary optic atrophy than the authors' early experience suggested, but the prediction that "in paretic and possibly in other types of parenchymal neurosyphilis penicillin will be found to be most efficacious when used in conjunction with therapeutic fever" now appears to have been well grounded. Those interested in neurosyphilis and in the intricacies of neuropsychiatric diagnosis will find this a book of significant value.

Heredopathia atactica polyneuritiformis: A Familial Syndrome not Hitherto Described. A Contribution to the Clinical Study of the Hereditary Diseases of the Nervous System. By Sigvald Refsum. Translated from Norwegian by Claude Lillingston, M.D. Paper. Pp. 303, with 28 illustrations. Johan Grundt Tanum Forlag, Oslo; Mercators Tryckeri, Helsingfors, 1946.

During 1937-1943 an unusual syndrome was presented by 4 Norwegian patients who belonged to two different families and were treated in the neurological department of the Rikshospital. They presented an unusual syndrome and had previously been referred to at a neurologic demonstration at the Rikshospital in Oslo on June 7, 1944 at a staff meeting and at the ninth Congress of Scandinavian Neurologists on Sept. 23, 1945 at Stockholm. A short preliminary communication was published in *Nordisk Medisen.* The clinical picture has been mentioned by Professor Monrad Krohn in the Text Book of Internal Medicine, volume v, under the term "heredopathia atactica polyneuritiforms (Refsum)." As far as the author can ascertain, the familial syndrome has previously not been described.

The syndrome consists of hemeralopia, which occurred in all 5 patients, and atypical retinitis pigmentosa, which occurred in all 3 members of family B. In the 2 patients of family A the fundus could not be viewed adequately because of miosis. These 2 patients had concentric limitation of the field of vision in addition to hemeralopia. The syndrome is also characterized by a condition suggestive of chronic polyneuritis (decreased to absent deep reflexes), reduced position and vibration sense, deep muscle tenderness, inconstant superficial sensory signs, pains, paresthesias and ataxia mainly cerebellar in type and other cerebellar phenomena. Changes began in adult life and were insidious. Hemeralopia and visual field changes preceded disturbances of gait by years. One patient noticed remissions in periods of rest. Treatment was of no value, although in 1 patient there was a question of some objective improvement. There were no mental changes.

Three of the patients presented definitely pathologic electrocardiograms. Three of the patients presented sinus tachycardia. In the fifth case, death occurred suddenly and no electrocardiogram was performed. Both patients of family A died of suggestive respiratory paralysis. The cerebrospinal fluid of 3 patients showed an albuminocytologic dissociation with a normal cell count and a great increase of protein. Three patients had abnormal pupils. Two patients suffered from a neurogenic impairment of hearing. Two patients of family A showed symmetrical epiphysial dysplasia in the elbow, shoulder and knee joints.

Clinical analysis indicates a relationship to the heredoataxias and progressive neural amyotrophy. It is considered hereditary, possibly a simple recessive mode. Postmortem examination of 2 patients of family A suggests that the pathologic findings resemble the lipoidoses such as Niemann-Pick disease and familial amaurotic idiocy. Each case record is given in detail and then summarized. The symptomatology in general is then summarized. There is a detailed differential diagnosis with a bibliography of 817 references. The general summary is also in French and German. Further recognition and pathologic study of additional cases will prove this syndrome as a definite entity. From the genetic point of view it should be recognized to prevent its propagation.

Practical Handbook of the Pathology of the Skin: An Introduction to the Histology, Pathology, Bacteriology and Mycology of the Skin with Special Reference to Technique. By J. M. H. MacLeod, M.A., M.D., F.R.C.P., Physician and Hon. Director of the Pathological Department, St. John's Hospital for Diseases of the Skin, London, and I. Muende, M.R.C.P., M.B., B.S., Physician with charge of Pathological Department and Lecturer at St. John's Hospital for Diseases of the Skin, London. Third edition. Cloth. Price, $10.50; 50s. Pp. 415, with 152 illustrations. P. B. Hoeber, Inc., Medical Book Department of Harper & Brothers, 49 E. 33d St., New York 16; H. K. Lewis & Co., Ltd., 136 Gower Street, London, W. C. 1, 1946.

The authors' purpose is more accurately described by the subtitle. The book deserves special recommendation for the clarity and balance used in presenting difficult technical subject matter. The more common diseases, as eczema, psoriasis and epithelioma, are discussed fully, while the authors fortunately resisted the temptation to dwell at length on rare conditions with bizarre pathologic pictures. Emphasis is placed on the mechanism of pathologic changes—on pathologic changes in motion as it were—and these changes are skilfully correlated with clinical findings. The book contains thirty-seven short chapters dealing with all phases of the subject. There are notes on the object and technic of biopsies, the preparation of sections and stains, embryology and the normal histology of the skin. The pathologic changes are considered as they affect the separate layers of the skin and its special structures and appendages: the blood vessels, hair, sweat glands and pigment. The pathologic changes are considered usually in the light of differential diagnosis. The section on vesicles, for instance, describes them as they occur in eczema, dyshidrosis, miliaria, scabies, varicella, herpes and pemphigus. Hyperkeratoses, edemas, dystrophies, atrophies and other pathologic states are similarly considered and so give a better comprehension of the various clinical pictures. In addition, the book also contains material of a type usually found in works on clinical pathology, such as methods for examining scales and blood smears and for the identification of various fungi and parasites that attack the skin. There are numerous well chosen illustrations in the form of drawings and photomicrographs, many of them in color. The book is well indexed. Altogether this is a simplified, well written, practical handbook that should be useful to both medical students and practitioners.

Pharmacy's Part in Society. By George Urdang, Ph.G., D.Sc.Nat., Sc.D. Cloth. Price, $1.05. Pp. 93, with illustrations. American Institute of the History of Pharmacy, Pharmaceutical Library, 457 Chemistry Building, Madison, Wisconsin, 1946.

This volume presents a brief historical sketch of the contributions of the science of pharmacy to the health and culture of the people of the world. Emphasis is placed on the scientific contributions of a number of famous members of the pharmaceutical profession to chemistry, botany, agriculture and medicine. The book is attractively printed and lavishly illustrated and should prove of interest to historically minded physicians and pharmacists.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

TREATMENT OF ARTERIOSCLEROTIC LEG

To the Editor:—Please discuss the treatment of a man aged 60 with moderately severe diabetes mellitus which is under excellent control. The patient has inadequate circulation of the foot, with an ulcer of the ankle. X-ray examination reveals extensive calcification of the posterior tibial vessel. Is there any way to decalcify this vessel?

M.D., New Mexico.

ANSWER.—Chronic ulcer at the level of the ankle in a man aged 60 afflicted with diabetic arteriosclerosis is apt to be due to the obliteration of arteries and probably the arterioles of the lower extremity. Often venous stasis or deep thrombophlebitis may be additional factors. Presuming that not only the blood sugar but the blood cholesterol is under sufficient control, the problem resolves itself into increasing circulation to the affected area. If the ulcer is infected, dressings with penicillin solution or jelly are helpful. Rest in bed for several weeks is important. If the foot and ankle are moist and cold but can be warmed up by a heat cradle on the abdomen, sympathetic activity can be abolished by paravertebral injections of procaine. Lumbar ganglionectomy is safe, simple and quite effective in experienced hands and if vascular involvement elsewhere, such as in the heart, kidneys or brain, is not prominent. If there is evidence of diabetic neuritis with intermittent "lancinating" pain, peripheral nerve crushing is of some benefit. Intermittent venous hyperemia produced by a blood pressure cuff and used by the patient himself is useful in suitable cases. Amputation may be inevitable if the leg remains intractably painful, if it is wholly useless or if ascending infection develops. The responsibility of directing treatment should be shared by the family physician and a consultant. The calcified vessels can neither be canalized nor decalcified, and only by increasing the caliber and number of collateral vessels can improvement be expected.

B. SUBTILIS IN VAGINAL CULTURES

To the Editor:—A woman aged 32 has been complaining of a profuse, persistent vaginal discharge of many years' duration. Repeated cultures of the discharge revealed only Bacillus subtilis. Please discuss treatment.

M.D., Maine.

ANSWER.—Bacillus subtilis is usually a contaminant. There are many causes for discharge from the vagina in a woman aged 32. These conditions include vaginal trichomoniasis, vaginal mycoses, foreign body in the vagina, cervicitis and excessive cervical secretion. Ordinarily cultures of vaginal discharge are a less satisfactory way of establishing a diagnosis because rarely will one find a single organism. There may be a great preponderance of one organism, but if one uses proper mediums and both aerobic and anaerobic cultural technics one should find several different types of bacteria. It is suggested that a careful study be made of a hanging drop and of a direct smear (stained by Gram's method). The treatment of course will depend on what is actually causing the condition. A thorough inspection of the cervix should be made. The cervix may be the primary focus even though there is some vaginitis. There is no good evidence incriminating B. subtilis as the offending organism. Hence further study is necessary either to establish this point or to arrive at a proper diagnosis.

MARRIAGE OF FIRST COUSINS

To the Editor:—A young couple desire to be married but fear to do so because they are first cousins. Careful questioning has failed to disclose any history of congenital deformity, epilepsy, diabetes, tuberculosis or nervous and mental disorders in any member of the family in the past two generations. The parties involved present no physical or psychiatric problems. Under these circumstances should there be any fear of unhealthy offspring as a result of this union?

M.D., California.

ANSWER.—Most geneticists believe that there is no biologic objection to marriage of first cousins, if no undesirable inherited traits or extremes of personality occur in that part of the ancestry which they have in common. Ordinarily knowledge of the two preceding generations is sufficient to establish the facts.

POSSIBLE PSEUDOHEMOPHILIA

To the Editor:—A white boy aged 11 years, of Italian descent, has had recurrent severe epistaxis since infancy. His mother had the same condition but was relieved by operation on the nose. The nature of the operation is unknown. The boy has had nasal cauterization innumerable times with temporary relief. Physical examination, including examination of the nose, is negative. The only positive finding is an absence of clot retraction after twenty-four hours, with only negligible retraction after forty-eight hours. All other blood studies are within normal limits. There are no petechiae on the antecubital skin after fifteen minutes at a pressure of 85 mm. Hemorrhage stops with local application of ceanothyn but forms large clots which obstruct breathing. At the present time the patient is receiving ascorbic acid 75 mg. daily and rutin 20 mg. three times daily. Does this case fit the description of any of the lesser known blood dyscrasias? What treatment is suggested?

Robert E. Sinderbrand, M.D., Egg Harbor City, N. J.

ANSWER.—In the patient as described in the query two or more tests should be made of the coagulation time of venous blood (Lee-White method), bleeding time (both the Duke and Ivy methods), platelet count, clot retractility, prothrombin time, plasma fibrinogen and capillary fragility. The normal blood clot occasionally fails to retract unless loosened from the walls of the tube by a platinum wire.

In 1918 Glansmann (*Jahrb. f. Kinderh.* **88**:1 and 113) reported cases of a familial hemorrhagic diathesis characterized by a poor or incomplete clot retractility and a normal bleeding time, coagulation time and platelet count. He thought the condition was related to a platelet defect and called it hereditary hemorrhagic thrombasthenia. Similar cases have not been reported.

Von Willebrand (*Arch. f. klin. Med.* **17**:453, 1933) later described a syndrome which he designated as pseudohemophilia. The disease was hereditary and was associated with a tendency to bleed. Epistaxis was common. The bleeding time was regularly prolonged, but the coagulation time, platelet count and clot retractility were normal. Sixty-two cases from the literature meeting these criteria have been recently analyzed by Estren, Médal and Dameshek (*Blood* **1**:504 [Nov.] 1946) and they added 11 cases of their own. The clot retractility was abnormal in 6 out of 61 cases in which the test was performed. Somewhat less than half of the cases showed increased capillary fragility.

It is possible that the case in the query as well as other cases of familial epistaxis reported in the literature fall into the category of pseudohemophilia. The absence of visible lesions in the nose and the abnormality of the clot retraction are against the diagnosis of hereditary hemorrhagic telangiectasia.

There is no effective treatment for this condition. Nasal hemorrhage often can be controlled by the application of thrombin soaked gauze or of thrombin-fibrin foam. Blood transfusions usually have no effect on the bleeding but should be given for anemia resulting from hemorrhage.

CEREBRAL HEMORRHAGE AND MUSCULAR EXERTION

To the Editor:—A man aged 40 with known hypertension lifted a heavy object while working at his usual occupation. He was seized with unsteadiness, lapsed into a coma and died within an hour. The cause of death was given as arterial hypertension and massive cerebral hemorrhage. Is it fair to say that the effort involved in the lifting of the heavy object precipitated a rupture of a cerebral vessel previously damaged by arteriosclerosis or is it the present consensus that such an accident was purely fortuitous?

M.D., Connecticut.

ANSWER.—With hypertension and cerebral arterial disease a cerebral hemorrhage may occur at any time without relationship to any effort or activity. As far as we know, hemorrhage is usually the end result of progressive disease uninfluenced by any temporary rise in blood pressure.

Blood pressure is temporarily raised by the lifting of a heavy object. It is logical to expect that such a rise in pressure increases the possibility of hemorrhage. If it does so, then the hemorrhage will take place during the time the pressure is raised. The increase in pressure from a lifting effort disappears immediately on cessation of the effort, so that any effect of the effort must ensue immediately. The assumption of cause and effect seems rational.

Logical though it may be, causal relationship of so common a condition cannot be accepted without examination in the light of clinical observation of a series of cases. Clinically, the evidence is not strong that cerebral hemorrhage is distinctly more common during effort than when the patient is at rest. However, most observers believe that hemorrhage is more frequent during sneezing, straining at stool and on muscular effort than can be ascribed to coincidence. These are activities that cause a temporary physiologic rise in blood pressure. Considering the data we must conclude that it is probable that in the case described in the query the lift was a factor in precipitating the hemorrhage.

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Acta chirurgica Scandinavica. Stockholm.
Acta clinica belgica. Brussels.
Acta dermato-venereologica. Stockholm.
Acta medica orientalia. Jerusalem.
Acta medica scandinavica. Stockholm.
Acta oto-laryngologica. Stockholm.
Acta pathologica and microbiologica Scandinavica. Copenhagen.
Acta psychiatrica et neurologica. Copenhagen.
Acta radiologica. Stockholm.
American Heart Journal. St Louis.
American Journal of Clinical Pathology. Baltimore.
American Journal of Digestive Diseases. Fort Wayne, Ind.
*American Journal of Diseases of Children. A. M. A., Chicago.
American Journal of Hygiene. Baltimore.
American Journal of the Medical Sciences. Philadelphia.
American Journal of Medicine. New York.
American Journal of Obstetrics and Gynecology. St. Louis.
American Journal of Ophthalmology. Cincinnati.
American Journal of Orthodontics and Oral Surgery. St. Louis.
American Journal of Orthopsychiatry. New York.
American Journal of Pathology. Ann Arbor, Mich.
American Journal of Physiology. Baltimore.
American Journal of Psychiatry. New York.
American Journal of Public Health. New York.
American Journal of Roentgenol. and Radium Therapy. Springfield. Ill
American Journal of Surgery. New York.
American Journal of Syphilis, Gonor. and Venereal Diseases. St. Louis
American Journal of Tropical Medicine. Baltimore.
American Practitioner. Philadelphia.
American Review of Soviet Medicine. New York.
American Review of Tuberculosis. New York.
Anesthesiology. New York.
Annals of Allergy. Minneapolis.
Annals of Internal Medicine. Lancaster. Pa.
Annals of Otology Rhinology and Laryngology. St. Louis.
Annals of the Rheumatic Diseases. London.
Annals of Surgery. Philadelphia.
*Archives of Dermatology and Syphilology. A. M. A., Chicago.
Archives francaises de pediatrie. Paris.
*Archives of Internal Medicine. A. M. A., Chicago.
Archives des maladies de l'appareil digestif. Paris.
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Archivos de la Sociedad argentina de anatomía normal y patológica. Buenos Aires.
Archivos uruguayos de medicina, cirugía y especialidades. Montevideo.
Arizona Medicine. Phoenix
Australian Journal Experimental Biology and Medical Science. Adelaide.
Australian and New Zealand Journal of Surgery. Sydney.
Blood. New York.
Boletim do Sanatorio São Lucas. São Paulo.
Brain. London.
Brasil medico-cirurgico. Rio de Janeiro.
British Journal of Dermatology and Syphilis. London.
British Journal of Experimental Pathology. London.
British Journal of Ophthalmology. London.
British Journal of Radiology. London.
British Journal of Surgery. Bristol.
British Journal of Tuberculosis. London.
British Journal of Urology. London.
British Medical Journal. London.
Bulletin of the Johns Hopkins Hospital. Baltimore.
Bulletin of the Los Angeles Neurological Society.
Bulletin of the New York Academy of Medicine. New York.
Bulletin de l'Office international d'hygiene publique. Paris.
Bulletin of the U. S. Army Medical Department. Washington, D. O.
Cadernos científicos. Lisbon.
California Medicine. San Francisco.
Canadian Journal Public Health. Toronto.
Canadian Medical Association Journal. Montreal.
Cancer Research. Baltimore.
Cardiologia. Basel.
Cincinnati Journal of Medicine. Cincinnati.
Clinical Science. London.
Connecticut State Medical Journal. Hartford.
Delaware State Medical Journal. Wilmington
Dermatologica. Basel.
Día Médico. Buenos Aires
Diseases of Chest. Chicago
East African Medical Journal. Nairobi.
Edinburgh Medical Journal.
Endocrinology. Springfield, Ill.
Experimental Medicine and Surgery. Brooklyn.
Gastroenterologia. Basel.
Gastroenterology. Baltimore.
Geriatrics. Minneapolis.
Ginecología y obstetricia de México. Mexico, D. F.
Giornale di medicina Palermo.
Glasgow Medical Journal.
Harefuah Tel-Aviv
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Hoja tisiológica. Montevideo.
Illinois Medical Journal. Chicago.
Indian Journal of Medical Research. Calcutta.
Industrial Medicine. Chicago.
Irish Journal of Medical Science. Dublin.
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Journal of Bacteriology. Baltimore.
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Journal of the Kansas Medical Society. Topeka.
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Journal of the Missouri State Medical Association. St. Louis.
Journal of the Mount Sinai Hospital. New York.
Journal of the National Cancer Institute. Washington, D. C.
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Journal of Nervous and Mental Disease. New York.
Journal of Neuropathology and Experimental Neurology Baltimore.
Journal of Neurophysiology. Springfield, Ill.
Journal of Nutrition. Philadelphia.
Journal of Obstetrics and Gynaecology of the British Empire. Manchester.
Journal of the Oklahoma State Medical Association. Oklahoma City.
Journal of Pathology and Bacteriology. Edinburgh.
Journal of Pediatrics. St. Louis.
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Lancet. London.
Laryngoscope. St. Louis.
Leprosy Review. London.
Lisboa médica. Lisbon.
Lyon chirurgical. Paris.
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Medical Journal of Australia. Sydney.
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Medicina. Mexico, D. F.
Medicine. Baltimore.
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SUBJECT INDEX

This is an index to all the reading matter in THE JOURNAL. In the Current Medical Literature Department only the articles which have been abstracted are indexed.

The letters used to explain in which department the matter indexed appears are as follows: "BI," *Bureau of Investigation*; "E," Editorial; "C," Correspondence; "OS," Organization Section; "ab," abstracts; the star (*) indicates an original article in THE JOURNAL.

This is a subject index and one should, therefore, look for the subject word, with the following exceptions: "Book Notices," "Deaths," "Medicolegal Abstracts" and "Societies" are indexed under these titles at the end of the letters "B," "D," "M," and "S." State board examinations are entered under the general heading State Board Reports, and not under the names of the individual states. Matter pertaining to the Association is indexed under "American Medical Association." The name of the author, in brackets, follows the subject entry.

For author index see page 1369.

A

ACS (antireticular cytotoxic serum), death of Bogomolets, 123
A. F. of L.: See American Federation of Labor
A-N-1 Formula of Benson Laboratories, 131: 1421, Aug. 24, 1946
ASTRP: See Army, U. S., Specialized Training Reserve Program
ABADOL (2921 RP) treatment of toxic diffuse goiter, [Perrault] 353—ab
ABBOTT BROS. Compound, 422—BI
ABBOTT LABORATORIES and the A.M.A., [Fishbein] ★687; ★690; ★762
  president: R. M. Cain, death, 706
ABDOMEN: See also Gastrointestinal Tract; Pelvis; Peritoneum
  Adhesions: See Adhesions
  Ascites: See Ascites
  disease, rebound tenderness in, and Rovsing's sign, 508
  examination in small bowel obstruction, [Evans & Bigger] ★514
  Gaseous Distention: See Flatulence
  pain, fatal acute porphyria, [Abbott] 723—ab
  Pain (gas): See Flatulence
  Surgery: See also Appendectomy; Appendicostomy; Cesarean Section; Gallbladder excision
  surgery, curare in, [Howard] 204—ab
  surgery, muscular relaxation with pentothal-oxygen-curare, [Davison] 1245—ab
  surgery, visibility of operative field, [Cardoso] 652—ab
  tumors, primary retroperitoneal, [Donnelly] 649—ab
ABNORMALITIES: See also under specific organ and region as Arteries, coronary; Heart
  congenital hypoplastic anemia with, [Estren] 1306—ab
  congenital malformations due to irradiation and malnutrition, [Keitel] 716—C
  defects in newborn, infectious diseases in mother in pregnancy, [Swan] 1316—ab
ABORTION: See also Medicolegal Abstracts at end of letter M
  criminal, court upholds conviction, O., 491
  criminal, physician sentenced, N. J., 562
  criminal, 3 sentenced, Minn., 490
  diagnosis; use of metreurynter in uterine bleeding; positive Aschheim-Zondek test, 74
  missed, 213
  therapeutic, for erythroblastosis fetalis, 479—E
ABRAMS, ALBERT, review of book on spondylotherapy in 1911, [Fishbein] ★765
ABSCESS: See *also* Suppuration; Ulcers; under organ affected as Brain; Breast; Liver
  peritonsillar, penicillin *for*, [*Rosenberg*] *888*—ab
  Subdiaphramatic: See Diaphragm abscess
  treatment, bacitracin, [Meleney & Johnson] ★675
  treatment, emetine, [Melchior] 503—ab.
ABSTRACTS: See Journals
ACADEMY: See under names of specific academies as *American* Academy; under Societies at end *of letter* S
  of Medical Sciences of USSR, 713
  of Medicine of Turin, 495
  of Surgery, foreign members elected, France, 1234
ACARIASIS, pulmonary, or tropical eosinophilia, [Hall] 967—ab
ACCELERATION, protect aviators against effects of, [Behnke] ★454
ACCIDENTS: See also Disability; Trauma; World War II, casualties; Wounds
  Aviation: See Aviation
  danger in kitchen, 1295
  emergency hospital and ambulance centers, Los Angeles, 1227
ACCIDENTS—Continued
  fatal, and disabling injuries, 1946 statistics from National Safety Council, 564
  fatal, of physicians in 1946, 108—E
  fatal, violent deaths in Cook County, Ill., 412
  Industrial: See Industrial Accidents
  Prevention: See National Safety Council; Safety
ACETYL - *beta* - *methylcholine* bromide: See Mecholyl Bromide
ACETYLCHOLINE treatment of paroxysmal tachycardia, [Segers] 729—ab
  treatment of myasthenia gravis, 1252
ACHLORHYDRIA: See Stomach acidity
ACID, *acetic, saline-glycerine mixture* for debridement of burns, 811
  acetylsalicylic, added to alcoholic beverages, effect, 1253
  acetylsalicylic, aspirin poisoning, value of gastric lavage, 545—E
  *di*allylacetic, bismuth salt of, deaths from Analbis Suppositories, 832—E; [Weinstein] 962—C
  Amino Acids: See Amino Acids
  aminoacetic (glycine) treatment of myasthenia gravis, 1252
  para-aminobenzoic, in Rocky Mountain spotted fever, [Ravenel] ★989
  Ascorbic: See also Vitamins C
  ascorbic, metabolism, [Johnstone] 647—ab
  ascorbic, N.N.R., (Miller) 619; (Buffington's Inc.), 937
  Ascorbic, Sodium Salt of: See Sodium ascorbate
  Barbituric, *Compounds*: See Barbiturates
  Cevitamic: See Acid, ascorbic
  Citric: See also Lemon juice
  citric, synthesis, evidence in man, [Strom] 202—ab
  dehydrocholic (Decholic), action, 146
  dehydrocholic, N.N.R., (Miller; Harrower) 619
  fatty (essential), and eczema, [Hansen] 1240—ab
  fatty, new vitamin in butter, 1299
  folic, in macrocytic anemias, [Berman] 127—ab; [Goldsmith] 501—ab
  folic, in pellagrous glossitis, [Spies] 425—ab
  folic, in pernicious anemia, [Harrison] 574—ab; [Meyer] 1306—ab
  folic, in pernicious anemia fails to prevent neurologic relapse, [Heinle & Welch] ★739
  folic, in possible subacute combined degeneration, 1043
  folic, in tropical sprue, [Suarez] 724—ab; [Manson-Bahr] 894—ab
  folic, panhematopoietic stimulus, [Doan] 128—ab
  folic, use to avoid allergy to liver extract, [Sullivan & Broun] ★178
  lactic, injection in osteoarthritis, [*Mawson*] *352*—ab
  mandelic, in urinary infections, [Pool & *Cook*] ★585
  Mesoxalic, Ureide of: See Alloxan
  Nicotinic: See also Vitamins B_1
  Nicotinic, Diethylamide of: See Nikethamide
  nicotinic, for headache, 1044
  nicotinic, Niacinamide, N.N.R., (Harrower; Vale), 695
  nicotinic, sodium nicotinate or nicotinic acid amide for migraine, 812
  oxalic, effect on calcium metabolism; protects against erosion of dental enamel, 1010—E
  phosphatase (serum) estimation in prostate cancer, [Herbert] 69—ab
  Picric: See Trinitrophenol
  vaccenic, new vitamin in butter, 1299
ACID-BASE BALANCE, bicarbonate and renal regulation of, 777—E
ACIDITY, Gastric: See *Stomach acidity*
ACIDOPHILUS Milk: See Milk
ACIDOSIS: See Acid Base Balance
ACNE: See also Furunculosis
  tropical, [Novy] 889—ab
ACROMEGALY *and* cardiomegaly, [Schornagel] 1172—ab
ACTINOMYCES: *See also Streptomycin*
  griseus (Waksman), antidotal property of *filtrates*, 960
ACTINOMYCOSIS due to Nocardia asteroides, [Kirby] 571—ab
ACTIVITY, Early Rising After Operation: See *Convalescence*
ADAMS, JOHN C., U.S. Navy assignments, 488
ADDICTION: See Alcoholism; Meperidine; Morphine; Narcotics
ADDISON'S ANEMIA: See Anemia, Pernicious
ADDISON'S DISEASE, diagnosis, water test, [Levy] 136—ab
  in Negro, [Conn] 128—ab
  treatment, adrenal graft, [Broster] 68—ab
ADEMO Tablets, 264—BI
ADENOMA, bronchial, [Holley] 573—ab; (lung resection) [Tricerri] 895—ab
  Nontoxic, of Thyroid: *See Goiter*
  of Islands of Langerhans in pregnancy, [Pompen] 1317—ab
  of large intestine; relation to cancer, [Helwig] 1313—ab
  Toxic, of Thyroid: See Goiter, Toxic
ADENOMYOSIS: See Endometriosis
ADHESIONS, abdominal, postoperative, [Green] 723—ab
ADHESIVE strapping for low back pain, [Schaubel] 648—ab
ADOLESCENCE, syphilis higher among teen age boys and girls, Mich., 792
ADRENALIN: See Epinephrine
ADRENALS: See also Addison's Disease
  cortex, hormone producing *tumor*, [Spence] 1311—ab
  cortex, possible masculinizing *tumor*, 213
  graft for Addison's disease, [Broster] 68—ab
  Hormone (sympathetic): See Epinephrine
  tumors, pheochromocytoma, [Espersen] 142—ab
  tumors, pheochromocytoma, role in malignant hypertension, [Washington] 724—ab
ADVERTISING by physicians, [Fishbein] ★838
  Committee of A.M.A., 1923, [Fishbein] ★932
  Cooperative Advertising Bureau, founded in 1912, [Fishbein] ★767
  Cooperative Medical Advertising Bureau, [Weld] 553—ab; [various authors] 629—ab
  medical editor consults his *readers*, [Wiprud] 624—ab
  medical, ethics of, in 1865-1866, [Fishbein] ★24; ★25; (*in 1883*) ★*239*; ★240
  newspaper, and state societies, [various authors] 628—ab
  of A. M. A. JOURNAL, etc., growth from 1898 to 1946, [Fishbein] ★605
  of commercial laboratories, *1922*, [Fishbein] ★926
  of proprietaries and nostrums in JOURNAL, 1894, [Fishbein] ★239; ★240; ★390; ★391; ★464; ★470; ★535; ★607; ★608; ★612; ★681; ★683
  of proprietary infant foods, 1915, [Fishbein] ★837
  products accepted for advertising to public, (Council discusses), 850
AEROBACTER aerogenes, urinary tract infection, streptomycin for, [Adcock & Plumb] ★579
AERONAUTICS: See Aviation
AERO-OTITIS Media: See Otitis Media
AFRICA, immunizations for Kenya Colony, 434
AFTERBIRTH: See Placenta
AGE, Adolescent: See Adolescence
  at death of physicians in 1946, 108—E
  effect on blood pressure, [Russek] 127—ab
  limits for university professors, Italy, 880
  middle, toxic goiter in, [Whishaw] 352—ab
  of Nobel Prize winners, 296—ab
  Old: See Old Age

AGGLUTINATION, inhibition test in influenza vaccination, [Florman] 128—ab
  of red cells by mononucleosis serums, [Burnet] 67—ab
  Rh See Rh Factor
  test for mumps antibody, [Burnet] 67—ab
AGGLUTINOGEN, Rh: See Rh Factor
AGRANULOCYTOSIS, ACUTE, induced by arsenotherapy, [Fisher] 1305—ab
  induced by gold, BAL for, [Lockie & others] *754
  induced by sulfonamide, penicillin cures, [Faber] 968—ab
  induced by thiouracil, 544—E
  medullary hypoplasia, [Alvarez] 1248—ab
  treatment, penicillin, [Mackenzie] 1316—ab
AGRICULTURE See Farmers, Rural Communities
AIR See also Oxygen
  borne infection, control, [Perkins] 1304—ab
  disinfection, glycol vapors for, 696—E
  disinfection, ultraviolet radiation for, (Council report), 936
  Embolism See Embolism, pulmonary
  Injection of See Pneumogram (cross reference); Pneumothorax, Artificial
  pollution, soot fall averages 112 tons per square mile, N Y C, 562
  pollution, study of sunshine, smoke and dust, Chicago, 334
AIRBORNE Medical Society organized, England, 261
AIR MEDAL See World War II, Heroes
AIR PASSAGES See Respiratory System
AIRPLANES See Aviation
ALASKAN clams, survey, 708
ALBERT Medal See Prizes
ALBUMIN in Urine See Albuminuria
ALBUMINURIA, Bence-Jones proteinuria relation to, [Bayrd & Heck] *150
ALCOHOL See also Whisky
  Addicts See Alcoholism
  drugs added to alcoholic beverage, effect, 1253
  Isopropyl: See Isopropyl Alcohol
  prescribing liquor, 1923, [Fishbein] *931
  psychiatric problem and, 561
  referendum and A M A, [Fishbein] *923, *926
  Summer School of Alcohol Studies at Yale University, 636
  synergism between barbiturates and, [Ramsey] 350—ab
ALCOHOLISM, chronic, research into causes N Y 335
  clinic, bills in Congress, 632—OS
  commission on, Conn, 1227
  committee for education on, Rochester, N Y, 876
  complications liver cirrhosis, liver extract intravenously for, [Labby & others] *1186
  conference on, Calif, 334
  liquor offenses and driving while intoxicated, F B I report, 416
  treatment, aversion (conditioned reflex), [Shanahan] 135—ab
  treatment, Keeley cure, [Fishbein] *386 *387
ALEPPO Boil See Leishmaniasis, cutaneous
ALIMENTATION See Infants, feeding
ALKYLATION plants, urinary fluoride excretion in employees, [Largent] 1309—ab
ALLEN'S Method See Anesthesia, refrigeration
ALLERGENS, ALLERGY See Anaphylaxis and Allergy
ALLIES See World War II
ALLOCATION See Priorities and Allocations
ALLOXAN diabetes, 195, 496
ALOE, plus tissue therapy of retinitis pigmentosa, [Lipkins] 652—ab
ALOPECIA, Dr Marshall's Scalp Medications, 568—BI
  seborrheica dandruff, 734
ALPHA Fagarine See Fagarine
  Omega Alpha Lecture See Lectures
ALTITUDE, High See also Aviation
  high, acclimatization to anoxia, [Houston] 650—ab
  high, concepts, [Behnke] *450
  high, decompression sickness, [Burkhardt & others] *373, [Behnke] *452
  high, decompression sickness and alveolar carbon dioxide tension, [Hodes] 719—ab
  high, decompression sickness, drug prevention, [Williams] 1308—ab
  high, effect of diet and exercise on bends at, [Burkhardt & others] *373
  high, ionosphere, insects survive flight by rocket, 874—OS
  high, liquid oxygen converter for breathing purposes, 559
ALUMINUM, effect on lungs of rabbits, [King] 208—ab
  hydroxide gel (colloidal) for peptic ulcer, [Jankelson] 1240—ab
ALVARENGA Prize See Prizes
AMARILLO, Texas, Q fever in, [Topping & others] *813, [Irons & Hooper] *815; [Irons & others] *819; [Cox & others] *820
AMAUROSIS: See Blindness
AMBLYOPIA: See Blindness
AMBULATION: See Convalescence
AMBULANCE centers, emergency, Los Angeles, 1227
AMEBIASIS: See also Colitis, amebic
  [Ellenberg] 424—ab
  clinical forms, 881
  complications: hepatic, 496
  complications pleurisy, [Carruthers] 1246—ab
  treatment, penicillin, [Knoll] 1242—ab
  treatment, sulfadiazine, [Ellenberg] 424—ab
  treatment, various drugs, 1042
AMERICAN: See also Inter-American, Latin America; National; Pan American, South American, United States, list of societies at end of letter S
  Academy of Pediatrics (study of child health service), 40
  Anti-Arthritis Association, organized, 1230
  Association for Advancement of Science, (resolution on National Science Foundation), 184—OS
  Association for Labor Legislation, [Fishbein] *923
  Association of Medical Editors, [Fishbein] *240
  Association of Medical Record Librarians, 1157—E
  Association of School Administrators (health challenge of our schools), 696—E
  Board for certification of general practitioners, 43; 942—OS
  Board of Internal Medicine, 943—OS
  Board of Obstetrics and Gynecology, 956
  Board of Ophthalmology (directory of certified specialists), 257
  Board of Pathology, (examination dates changed) 1165
  Board of Psychiatry and Neurology (examination), 191
  Board of Surgery (plan of organization), 337
  Bureau for Medical Aid to China, 709
  Cancer Society, (clinics, inspection by A C. S) **132:**1092; **133:**38
  Casualties See World War II
  College of Physician, Joint Committee for Coordination of Medical Activities (*formerly* the Committee on Postwar Medical Service): See American Medical Association
  College of Physicians (research fellowships awarded) 492
  College of Radiology (graduate course) 337
  College of Surgeons (inspection of American Cancer Society clinics, A M A Reference Committee report), **132:**1092, **133:**38, (fellowship pledge clause on fee splitting and rebates) [Patek] 715—C; (formation in 1914) [Fishbein] *770
  College of Surgeons, Joint Committee for Coordination of Medical Activities (*formerly* Committee on Postwar Medical Service): See American Medical Association
  Dermatological Association, organized 1876 (correction) 1025
  Federation of Labor, plans for sickness benefits, [Dickinson] *1285
  Foundation See Foundations
  Health Resorts See Health resorts
  Hospital Association, medical record librarians, 1157—E
  Institute of Nutrition Award See Prizes
  Journal See Journals
  Legion, Hawley criticizes for opposing medical reforms, 699—OS
  Medical Directory, history of, [Fishbein] *612, *682, *685, *687
  Medical Golf Association (tournament entry blanks), 631—OS
  Medical Journalist See Journals
  Medical Teaching Mission to Czechoslovakia, 546—E
  Nurses Association, [Naffziger & others] 1168—C
  Pharmaceutical Manufacturers Association Award See Prizes
  Physicians Literary Guild, 257, 1165
  Physicians Serving at the Front: See World War II, medical officers
  Public Health Association Committee (glycol vapors for disinfecting purposes), 696—E
  Q Fever See Q Fever
  Red Cross See Red Cross
  Society for Study of Arteriosclerosis being organized 1025
  Soldiers, etc See World War II
  Surgical Association, (correction) 1025, (resolutions on nursing problem) 1156—E; [Naffziger & others] 1168—C
  University of Beirut, New & Nonofficial Remedies given to, (Council discusses), 850
  Women's Association Medal See Prizes
AMERICAN MEDICAL ASSOCIATION
  Advertising Committee, 1923, [Fishbein] *932
  advertising, growth from 1898-1946, [Fishbein] *605
  American Medical Directory, history of, publication by Dr. G H Simmons, [Fishbein] *612, *682, *685, *687
  Anderson (Donald G), new Council secretary, 871—OS
  animal experimentation defended by, [Fishbein] *241, *388, *470
  Annual Conference of Secretaries and Editors (proceedings), 548—OS; 623—OS
AMERICAN MEDICAL ASSOCIATION—Continued
  Annual Congress on Medical Education and Licensure (program), 34—E; 59; (proceedings) 856—OS
  Archives: See subhead: Journals (special)
  Atlantic City Centennial Celebration, 32—E; 35; 45—OS, 631—OS; (General Scientific Meetings; program) 1010—E; 1013
  auto emblem, 1918, [Fishbein] *843
  Board of Public Instruction, first report, 1908, [Fishbein] *689
  Board of Trustees, history of, [Fishbein] (first) *238, *239, (takes over control of the Journal) *317; (authority of) *470, (in 1898) *472; (responsibility of) *607, (great power of A M A concentrated in Dr McMurtry's tribute to) *684; (Reference Committee reports) *685; (*New York Medical Record* attacks on) *685; *686, (in new building in 1907) *687; (publish minutes in 1910) *762, (needs more meetings, executive committee to meet monthly) *848, (reorganization in 1923) *930, (W. P Eagleton's request to dissociate editorship and general management, 1923) *931
  Board of Trustees (report), 39, (support standardization of iodized salt to prevent goiter) 620—E, (position on bills on education, security and health department) 1015
  Building: See subhead: Headquarters
  Bulletin, 1922 [Fishbein] *926
  Bureau of Exhibits (Reference Committee report), 40
  Bureau of Health Education See also subhead Radio Program
  Bureau of Health Education (Reference Committee report), 40
  Bureau of Information (Joint Committee report), 41
  Bureau of Investigation (Food and Drug Administration adulterated and misbranded products), 264, 422; 568, 883
  Bureau of Legal Medicine and Legislation See also Laws and Legislation, weekly summary, Medicolegal Abstracts at end of letter M
  Bureau of Legal Medicine and Legislation (physicians federal income tax), 401—E, 402—OS; (analysis of Taft-Smith-Ball-Donnell national health bill) 855—E, 868—OS, (general regulations promulgated under federal hospital survey and construction act) 946—OS, (first director, Dr Woodward, and his report in 1923) [Fishbein] *929, *931
  Bureau of Medical Economic Research (Reference Committee report), 40, (fundamental requirements of insurance), 481—E, [Dickinson] *483, (medical service areas in U S) 1011—E: [Dickinson] *1014, (medical groups in U S, 1946) [Dickinson] *1222; (trend toward labor health and welfare programs) [Dickinson] *1285
  Bureau on Medical Legislation at headquarters, [Fishbein] *683
  By-Laws, amendment (Reference Committee report), 38
  cancer control, motion on dispersal of federal funds for, 40
  Centennial. See subheads: Atlantic City Centennial Celebration, History, Radio Program
  Chemical Laboratory (Reference Committee report), 39
  Chicago Session of House of Delegates, proceedings, 35
  Committee. See also subheads. Joint Committee Reference Committee
  Committee on American Health Resorts activities referred to Council on Physical Medicine, 936
  Committee on Anesthesia, 1910, [Fishbein] *763
  Committee on Cancer, 1914, [Fishbein] *770
  Committee on Centennial Celebration (report), 35
  Committee on Defense of Medical Research, 1910, [Fishbein] *763
  Committee on Legislation, 1905-1909, [Fishbein] *681; (1910) *763
  Committee on Medical Ethics dealing with specialization, reports, 1866, [Fishbein] *25
  Committee on National Emergency Service (questionnaires to physicians in civilian practice during war), 480—E; [Dickinson] 548—ab, 550—ab
  Committee on Ophthalmia Neonatorum introduces silver nitrate to prevent blindness, 1908, [Fishbein] *689
  Committee on Reorganization of A. M A, 1901, [Fishbein] *537
  Committee on Rural Medical Service (report), 37, (questionnaire) 941—OS
  Committee to consider revision of constitution and by-laws (Reference Committee report), 37
  Conference: See subhead: Annual Conference
  Congress: See subhead Annual Congress
  Constitution and By-Laws, revision (Reference Committee report), 37
  Cooperative Medical Advertising Bureau [Weld] 553—ab, [various authors] 629—ab; (founded in 1913) [Fishbein] *767

AMERICAN MEDICAL ASSOCIATION — Continued
- Council on Defense of Medical Research, [Fishbein] ★691
- Council on Foods and Nutrition (Reference Committee report), 39; (some basic research needs in nutrition) [Jeans] ★245; (statement on pasteurization of milk) 249—E; (use of its seal) 321; (decision on iodized salt and goiter) 620—E
- Council on Health and Public Instruction, [Fishbein] ★763; ★764; ★766; ★768; (committee report on social insurance) [Fishbein] ★836 ff.; (review of its work, 1910-1919) ★845; ★923
- Council on Industrial Health (Reference Committee report), 40; (joint report on pyogen, spray promoted to industry as cold cure) 694
- Council on Medical Education and Hospitals (Dr. Weiskotten chairman), 34—E; (survey of medical schools) 109—E; (plan for uniform intern placement) 267; (Dr. Victor Johnson [illegible] ith Mayo Foundati [illegible] and fellowship [illegible] raining in applied [illegible] 697—E; 717; (new secretary: Dr. D. G. Anderson) 871—OS; (hospital service) ★1065; 1155—E; (schools for technicians, medical record librarians) ★1144-1150
- Council on Medical Education, history of, [Fishbein] ★687; ★690; ★769; ★839; ★927
- Council on Medical Service (report and [illegible] 35; (medical service [illegible] al of acceptance to [illegible] OS; (medical facilities available in rural Virginia) 251—OS; (regional conference) 407
- Council on Pharmacy and Chemistry, history of, [Fishbein] ★611; (cartoons ridiculing) ★681
- Council on Pharmacy and Chemistry (Therapeutic Trials Committee report on cost of clinical research), ★30; (Reference Committee report) 39; (methionine in preventing and treating liver injury) 107; (use of its seal) 321; 850 (dangers of tetrathionate therapy of thromboangiitis obliterans) 693; (joint report on pyogen, spray promoted to industry as "cold" cure) 694; (annual meeting) 850; (ointments containing estrogenic substances) 1009
- Council on Physical Medicine (Reference Committee report), 39; (use of its seal) 321; (procedure for evaluating percentage loss of hearing in medicolegal cases) ★396; (home diathermy) 541; (meeting, Dec. 13-14, 1946) 936; (orthoptics) [Lancaster & Lancaster] ★1211
- Councils, development of, [Fishbein] ★681
- daylight saving time advocated by, [Fishbein] ★848
- Directory Department: See also subhead: American Medical Directory
- Directory Department (Reference Committee report), 39
- Directory Report Service, [Fishbein] ★923
- enemies of, 1906, [Fishbein] ★686; (first organized attack as a medical trust), [Fishbein] ★761; (Lydston) ★769
- Fellowship to Veterans Administration physicians, A. M. A. Resolution on, 39
- finances, [Fishbein] (1897) ★469; ★605; (1907) ★682; ★688
- golf tournament, 631—OS
- headquarters (permanent), history of, [Fishbein] (Chicago vs. Washington) ★384; ★389; ★392; (61 Market St., Chicago) ★466; ★467; ★468; (at 535) ★608
- health and physical fitness project, 945—OS
- History, Centennial Celebration: See subhead: Atlantic City Centennial Celebration
- History of American Medical Association, [Fishbein] ★23; ★100; ★174; ★235; ★310; ★383; ★464; ★533; ★605; ★681; ★761; ★836; ★923; 938—E
- history, New York U. scroll commemorates founding of, 877
- history, postage stamp will commemorate centennial, 1219—OS
- history (Reference Committee report), 39
- history: semicentennial year: Philadelphia, 1897, [Fishbein] ★467; ★468; ★469
- Home: See subhead: Headquarters
- hospital service in the U. S. ★1065; 1155—E
- hospitals and health of people, [Parran] ★1047
- hospitals approved for internships, number, ★1081
- hospitals registered by, ★1083-★1143
- hospitals, standardization by, 1918, [Fishbein] ★843
- House of Delegates, history of, [Fishbein] (admission of Negro delegate) ★101; (institution in 1902) ★606; (speaker) ★606; (chairman for) ★682; (attacks nostrums, 1915) ★836; (speaker as its presiding officer, 1916) ★838; (first chairman: Dr. Hubert Work) ★840
- **House of Delegates** (minutes of Chicago session, Dec. 1946) 35
- Hoxsey—cancer charlatan and, 774—E; (correction) 957

AMERICAN MEDICAL ASSOCIATION — Continued
- Hurty (J. N.) letter for improved sanitation for pullman cars to, [Fishbein] ★607
- *Hygeia*, history of [Fishbein] ★924; ★925; ★926; ★929; ★930; ★931; ★933
- incorporated with national charter, 1905, [Fishbein] ★682
- insignia adopted in 1910, [Fishbein]] ★763
- insurance legislation, stand against, explained by speaker, 482—OS
- internships and residencies approved by, additional list, ★1078
- Johnson (Victor) accepts appointment with Mayo Foundation, 327—OS
- Joint Committee for Coordination of Medical Activities, (meeting, Oct. 12, 1946) 41; (meeting, Jan. 11, 1947) 941—OS
- Journal abstracts criticized 1902-1904 [Fishbein] ★607; (from German journals, 1919) ★849
- Journal, advertising in, drive against nostrums, etc. (1894) [Fishbein] ★390; ★391; (1895) ★464; ★470; (1901-1904) ★607; ★608; ★612; (1905-1906) ★681; ★683
- Journal, A.M.A. resolutions on including medical activities in Puerto Rico in, 40
- Journal, automobile number, [Fishbein] ★761
- Journal, book reviews and editorials, signing of [Fishbein] (1894) ★391; (1895) ★464
- Journal, censoring scientific papers 1900, [Fishbein] ★535
- Journal, costs, 1920, [Fishbein] ★924
- Journal, editorial on deaths of physicians first published, Jan. 9, 1904, [Fishbein] ★612
- Journal, editors, [Fishbein]] (first: Dr. N. S. Davis) ★239; ★311; (Dr. Hamilton to succeed Dr. Davis) ★317; (Dr. Culbertson, 1891) ★384; ★387; (Dr. Hamilton, 1888-1889, 1893) ★316; 317; ★389; (death of Dr. Hamilton, 1898) ★473; (Dr. Simmons, 1898) ★472; ★473; (death of Dr. Hyde assistant to editor; appointment of Dr. Fishbein) ★769; (appointment of Dr. Fishbein as editor, 1924) ★935
- Journal, educational number (first) in 1896, [Fishbein]] ★468
- Journal, founding of, [Fishbein] (suggested by Dr. S. D. Gross in 1869) ★26; ★100; (birth of) ★235; (gains, in 1885) ★310; (editorial changes, 1888) ★316; (suggested by Dr. J. B. Flint in 1852) ★687
- Journal in Spanish, 1918, [Fishbein] ★843
- Journal Index, (1899) [Fishbein] ★475; (1900) ★533
- Journal, new machinery for printing , 1901, [Fishbein] ★607
- Journal, Queries and Minor Notes, [Fishbein] ★609
- Journal, (Reference Committee report), 39
- Journal, special issue, 1887, [Fishbein] ★314
- Journal, Tonics and Sedatives, birth, 1903, [Fishbein] ★611
- Journal, want old copies for libraries in Netherlands, [Taylor] 345—C; [Kouwer] 715—C
- journals (special), American Journal of Diseases of Children, 1910, [Fishbein] ★762; ★764
- journals (special), Archives of Dermatology and Syphilology editorial board established, 1919, [Fishbein] ★848
- journals (special), Archives of Internal Medicine established, 1907, [Fishbein] ★688
- journals (special), Archives of Otolaryngology, [Fishbein] (requested in 1913) ★767; (founded in 1923) ★931
- journals (special), Archives of Surgery, 1911, [Fishbein] ★762; ★765; ★844; ★848
- journals (special), on public health, requested in 1910, [Fishbein] ★762; ★766
- journals (special), 1910, [Fishbein] ★764
- Judicial Council, history of, [Fishbein] (creation of, in 1873) ★103; (in 1911) ★764; (asked to define "sectarian practice" and "physician" in 1924) ★933
- Judicial Council, (report of Dr. Ivy on atrocities by German physicians), 35; (Reference Committee report) 40
- Library, history of, [Fishbein] (1870) ★101; ★238; (1894) ★391; (transferred to Newberry Library of Chicago 1895) ★466
- Library of Films, new additions, 802
- medical colleges rated by, [Fishbein] ★763
- Members, first woman, Dr. S. H. Stevenson, [Fishbein] ★175
- Mohler (Charles) Assistant Business Manager: death, 45—OS
- National Conference on Rural Health, (program) 326—OS; (proceedings) 778—OS;
- New and Nonofficial Remedies, distributed to American University of Beirut, 850
- New York State Medical Society and, [Fishbein] ★238; ★241
- nomenclature, disinterest in, in 1873 [Fishbein] ★103
- nurses training schools recommended, 1868, [Fishbein] ★26
- Officers, (Reference Committee report) 37; (death in 1946) 109—E
- participation in World War I, [Fishbein] ★838; ★839; ★841; ★842; ★848
- patents and, [Fishbein] ★471; ★770
- President's address (Reference Committee report) 37

AMERICAN MEDICAL ASSOCIATION — Continued
- President-Elect Bortz, 1012—E
- President-Elect West address (Reference Committee report), 37
- President-elect West resigns, 1012—E; 1016
- **Proceedings of Chicago Session of House of Delegates, 35**
- Public Health Education Committee of Women, 1910, [Fishbein] ★762
- public relations, question of publishing Rich Report (Reference Committee report), 38
- pure food law should be amended, 1911, [Fishbein] ★765
- Quarterly Cumulative Index Medicus, 1916, [Fishbein] ★839; (1922) ★927
- radio program, (centennial broadcasts: "Doctors—Then and Now") 250—OS; (electrical transcriptions: "Medicine Serves America") 324—E; 326; ("Dr. Graham and Family") 325—E; 326; 1159; (costs of) [Bauer] 630—ab
- Reference Committee in Executive Session, (report) 35
- Reference Committee on Amendments to Constitution and By-Laws, (report) 35
- Reference Committee on Credentials, (report) 35
- Reference Committee on Legislation and Public Relations, (report) 38
- Reference Committee on Medical Education, (report) 40
- Reference Committee on Medical Service, (report) 35; 38
- Reference Committee on Miscellaneous Business, (report) 35; 40
- Reference Committee on Reports of A.M.A. Officers, 37
- Reference Committees, first appointment, in *1902, [Fishbein] ★609*
- representative Dr. Rubinow sent to Europe to study sickness insurance, 1913, [Fishbein] ★770
- resolution defending animal experimentation, *1884 [Fishbein] ★241*
- resolution on A.M.A. Fellowship to Veterans Administration physicians (Reference Committee report), 39
- resolution on appointment of surgeons general, (Reference Committee report), 39
- resolution on Bituminous Coal Mine Wage *Agreement, 35*
- resolution on expert witnesses, [Fishbein] ★238
- resolution on fee splitting, [Fishbein] (1902) *★609; (1913) ★768*
- resolution on freedom of choice of physician by insured in 1917, [Fishbein] ★841
- resolution on inclusion in Journal of medical activities in Puerto Rico, (Reference Committee report), 40
- resolution on program of health legislation beneficial to the people (Reference Committee report), 40
- resolution on proprietaries in 1879, [Fishbein] ★178
- resolution on Study of Child Health Service by American Academy of Pediatrics, (Reference Committee report) 40
- resolution on Veterans Administration contracts, 35
- resolution on Woman's Auxiliary, 38
- resolution protesting action against Dr. Pallen accused of poisoning water in Croton reservoir, 1865, [Fishbein] ★24
- school health interests, 696—E
- schools for technicians, medical record librarians approved by, ★1144-1150
- Scientific Exhibit, 45—OS
- Scientific Exhibit, first in 1899, [Fishbein] ★475; (guides for) ★767
- *Secretary: Dr. Lull, (report) 39*
- Secretary (permanent), [Fishbein]] (Dr. Atkinson, 1872) ★102; (1882) ★238; (battle over, in 1895) ★465; (Dr. Simmons, 1895) ★464; ★465; (question of) ★467; ★470; ★473; (Dr. Craig, 1911) ★765; ★769
- Section on Anesthesia requested, 1921, [Fishbein] ★925
- Section on Experimental Medicine and Therapeutics, symposium on treatment: jaundiced patients; [Snell] ★1175
- Section on Gastroenterology and Proctology, created in 1913 [Fishbein] ★769; ★770
- Section on Genitourinary Diseases, 1910, [Fishbein] ★763
- Section on History of Medicine (Reference Committee report) 40
- Section on Miscellaneous Topics, [Fishbein] ★928
- Section on Ophthalmology, 1906, [Fishbein] ★685
- Section on Orthopedic Surgery, [Fishbein] (1895) ★465; (1912) ★766
- Section on Surgery, General and Abdominal, (symposium on treatment of wounds) [Lyons] ★215; [Stewart] ★216; [Snyder] ★219; [Rustigian & Cipriani] ★224; (discussion) 229
- sections, (in 1900) [Fishbein] ★534; (in 1917) ★841
- sections, papers presented before, resolutions on, in 1865, [Fishbein] ★24
- sections, reorganization, 1915, [Fishbein]] ★837

- AMERICAN MEDICAL ASSOCIATION — Continued
  - special train trouble, 1896, [Fishbein] ★466; 467, 471
  - *state and country secretaries, names and addresses, possible for A M A to publish?* 630—OS
  - television programs, 326—OS
  - Therapeutic Trials Committee, (Cost of Clinical Research), ★30, (Council discusses) 851
  - Treasurer, 1894, R J Dunglison, [Fishbein] ★391
  - U S Dept *of* Health urged by, [Fishbein] ★769
  - U S Dept of Health Education and Security, A M A *attitude* explained, 1015—OS
  - Washington office (Reference Committee report), 37
  - Woman's Auxiliary See Woman's Auxiliary
- AMIGEN, sensitivity to, [Poncher] 198—C, [Ratner] 497—C
- AMIGRIN *treatment of myasthenia gravis,* 1252
- AMINO ACIDS See also Amigen, Methionine
  - alimentation, [Remington] 890—ab
  - *essential, recent developments in biochemistry,* Netherlands, 56
  - nitrogen balance, 247-E
- *para*-AMINOHIPPURATE sodium plus penicillin treatment of endocarditis, [Loewe] 61—ab
- AMINOPHYLLINE See Theophylline ethylenediamine
- AMINOTHIAZOLE, treatment of toxic goiter, [Perrault] 353—ab, 544—E
- AMMONIUM, tetraethylammonium ion in vascular disease and causalgia, [Berry] 66—ab
- AMNIOTIC FLUID, intrauterine respiration of fetus, [Windle & Becker] 125—C
- AMPHETAMINE (benzedrine) sulfate and barbiturates, antagonism, 280
  - sulfate, *effect on pilots,* [Newman] *270—ab*
  - sulfate treatment in tuberculosis of lung, [Houghton] 805—ab
  - sulfate treatment *of obesity,* [Freed] *★371,* [Kunstadter] 800—C
- AMPUTATION See also Limbs, Artificial
  - amputee clinic N J, 562
  - amputees (civilian), needs of, 699—OS
  - finger, tendon sutures in, 358
  - finger tip, *new method for,* [Kutler] *★29*
  - home coming problems of amputee in movie The Best Years of Our Lives," 46—OS
  - midthigh, *best artificial leg for?* 656
  - phantom limb section of spinal cord for, [Browder] 272—ab
  - traffic regulations for car-driving amputees, 1219—OS
  - traumatic neuromas, [Cieslak] 722—ab
- AMYLOIDOSIS, *diagnosis, congo red test in,* [Sehlkoff] 804—ab
  - primary, of lungs, [Dirkse] 499—ab
- AMYTAL, sodium, *in testing for latent anxiety,* [Susselman] 500—ab
- ANALBIS Suppositories, deaths from, 852—E, [Weinstein] *962—C*
- ANALGESIA See Anesthesia, Pain, relief of
- ANAMILO Club of New York, organization of laryngectomized patients, 146
- ANAPHYLAXIS AND ALLERGY See also Asthma, Dermatitis venenata, Eczema, Hay Fever, Urticaria
  - allergens, chemical nature, [Rhoden] 728—ab
  - allergens, federal biologics regulations revised, 855—E
  - allergic pulmonary reactions of Loeffler's syndrome, 325—E; 776—E
  - allergy forum at Reading, Pa, 707
  - allergy in production of lesions in disease, 776—E
  - allergy research fund (Luzier's) to American College of Allergists, 1294
  - *clinics* in South America, 564
  - heredity, possibility in child whose mother has ragweed allergy? 1174
  - *periarteritis* nodosa and hypersensitivity, 620—E
  - sensitivity to amigen, [Poncher] 198—C; [Ratner] 497—C
  - sensitivity to benadryl [Geiger & others] ★392, [Schwartzberg & Willerson] ★393, [Weil] ★393
  - Sensitivity to Food· See Food
  - sensitivity to furacin, [Morin] 963—C
  - Sensitivity to Light See Light
  - sensitivity to liver extract, avoiding; use of folic acid, dried stomach and iron, [Sullivan & Broun] ★178
  - sensitivity to penicillin procaine intravenously for, [Rosellini] 204—ab, [Dressler & Dwork] ★849, [Abram] 1301—C; [Waldbott] 1301—C
  - *sensitivity to riboflavin, 434*
  - sensitivity to soap in eczema, [Beek] 895—ab
  - sensitivity to sulfathiazole and *not* penicillin, [Abram] 1301—C
  - sensitivity to sulfonamide, 435
  - serum sickness from influenza vaccine fatal, [Curphey] ★1062
  - serum sickness treatment with benadryl, *[Peterson & Bishop] ★1277*
  - treatment, benadryl danger of self medication, [Borman] ★394
  - *treatment, histamine, [Brown] 207—ab*
- ANAPHYLAXIS AND ALLERGY—Continued
  - treatment, *pollen desensitization in pregnancy,* contraindicated? 1174
  - treatment, urinary proteose, [Rhoads] 135—*ab*
- ANASTOMOSIS See Arteries
- ANATOMY, Morbid See Pathology
  - residency and fellowship programs must provide for training in, 697—E, 717
- ANCYLOSTOMIASIS, fatal, [Zimmerman] 268—ab
  - hookworm anemia, [Stransky] 1306—ab
- ANDERSON, DONALD G, A M A appointment, 871—OS
- ANDROGENS, estrogen ratio disturbance, periodic swelling of breast in men, 146
  - testosterone, growth promoting agents, 898
  - testosterone propionate to control menorrhagia, [Greenblatt] 723—ab
  - treatment of cancer, 734
  - treatment of functional uterine bleeding, 1253
  - treatment of migraine, [Barlstra] 1317—ab
- ANDRUS, CARLTON L, U S Navy assignments, 488
- ANEMIA See also Anemia, Pernicious
  - angina pectoris and, [Gelinas] 502—ab
  - aplastic, and quinacrine dermatitis, [Drake] 134—ab
  - effects of sulfonamides on fetus, 970
  - heart in, severe type, [Gelfand] 651—ab
  - hookworm, [Stransky] 1306—ab
  - Hypochromic See Plummer-Vinson Syndrome
  - hypoplastic congenital, with developmental defects, [Estren] 1306—ab
  - in scurvy, [Wade] 64—ab
  - macrocytic, avoid allergy to liver extract, use folic acid, dried stomach and iron, [Sullivan & Broun] ★178
  - macrocytic, folic acid for, [Berman] 127—ab, [Goldsmith] 501—ab
  - of thermal burns, [Moore] 426—ab
  - sickle cell, race specific disease, 33—E
  - splenic, Gaucher's method for staining kerasin 496
  - treatment methionine, [Gajdos] 574—ab
- ANEMIA, PERNICIOUS, complications· possible subacute combined degeneration, 1043
  - diagnosis, probable gastrointestinal lesion, 278
  - treatment folic acid, [Harrison] 574—ab, [Meyer] 1306—ab
  - treatment, folic acid; fails to prevent neurologic relapse, [Heinle & Welch] ★739
- ANERGY in infants' skin to diphtheria, [Wright] 573—ab
- ANESTHESIA. See also Anesthesiology, Anesthetists
  - A M A Committee on, in 1910, [Fishbein] ★763
  - Anesthesia (motion picture review), 265, 346
  - apparatus, new safety code, England, 797
  - caudal continuous, cause of fetal and maternal deaths, [McCormick] 801—C
  - *caudal continuous, graduate course by* USPHS, 702
  - caudal continuous, *in labor 249—E* [Collins] 649—ab
  - choice in orthopedic surgery, [Dillon] ★829
  - Cold See Anesthesia, refrigeration
  - curare in abdominal surgery, [Howard] 204—ab
  - *fatalities, number which occur annually during general and spinal anesthesia, 507*
  - history, ether and humbug, [Graham] ★97
  - in cesarean section, 881
  - in Labor: See also Anesthesia, caudal continuous
  - in labor [Volpitto] (correction) 258
  - local, method of prolonging action with benzocaine, 496
  - pentothal sodium intravenously for oral surgery, 812
  - refrigeration, [Crossman & Allen] ★377
  - saddle block; [Parmley] 129—ab
  - Spinal· See also Anesthesia, caudal continuous, Anesthesia, fatalities
  - spinal, complications, paralysis and impotence? [Mason] 345—C
  - spinal, headache after, vitamin B_1 for, [Bazzocchi] 430—ab
- ANESTHESIOLOGY department established at St Luke's, Spokane, 1165
- ANESTHETISTS, nurse, intern, and physician, [Graham] ★99
  - nurse, in all hospitals, ★1077
- ANEURYSM, Arteriovenous: See Fistula, arteriovenous
- ANGINA, Agranulocytic· See Agranulocytosis Acute
  - Monocytic See Mononucleosis, Infectious
  - Vincent's, penicillin for, [Hopp] 133—ab, [Page] 427—ab, [Hopp] 645—C
  - Vincent's, vitamin C for [Schnurman] 1036—ab
- ANGINA PECTORIS, anemia and, [Gelinas] 502—ab
  - diagnosis, ruptured intervertebral disk simulating, 1030
  - treatment, nitroglycerin tablets, age and effectiveness, [Sagall] 271—ab
  - treatment surgical [Saccomanno] 1241—ab
  - treatment, thiouracil, disadvantages, [Di Palma] 127—ab
- ANGIOMA, facial, treatment (reply) [Ronchese] *578*
- ANGIOSCOTOMA in prolonged mild anoxia, [Smith] 1308—ab
- *ANGIOSPASM,* Peripheral: See Raynaud's Disease
- ANGLO- See under England
- ANHIDROSIS See Sweat
- ANIMAL EXPERIMENTATION, A M A in defense of, [Fishbein] (in 1884) ★241, *(in 1893)* ★385 *(in 1897)* ★470
  - antivivisection bills in Congress, 184—OS; 327—OS, 631—OS, 948—OS
  - *Carlson (A J) recommends* counter antivivisection bills, 51
  - Parran (T) criticizes antivivisection in Kober *Lecture,* 1159—OS
  - watch the antivivisectionists, 182—E
- ANIMALS See also Birds, Cats, Cows; Dogs, Horses, Rats, Rodents
  - efficiency to produce human food, [Maynard] 202—ab
  - Experimentation with See Animal Experimentation
  - feeds (best), question of, to improve milk supply, 775—E
  - marine, dermatitis venenata from contact with [De Oreo] 720—ab
  - *Q fever in livestock handlers, [Topping &* others] ★813, [Irons & Hooper] ★815, [Irons & others] ★819, [Cox & others] ★820
  - tissue extracts effects on wound healing, [Hoffman] 720—ab
  - *virus infections in man traced to,* [Meyer & Eddie] ★822
- ANKYLOSTOMIASIS. See Ancylostomiasis
- ANNALS See Journals
- ANNUAL Conference· See American Medical Association
  - Congress See American Medical Association
- ANOMALIES See Abnormalities, under organ or region affected
- ANOXIA See Oxygen deficiency
- ANTERGAN, histamine antagonist, [Friedlaender] 1309—ab
- ANTHOCYANINURIA See Urine
- ANTHIOMALINE treatment in tuberculosis [Rose] 269—ab
- ANTHRACITE Miners See Miners
- ANTIBIOTICS See also Penicillin, Streptomycin
  - bacitracin, [Meleney & Johnson] ★675
  - *British Medical Bulletin* symposium, 478—E
  - from Ramalina reticulata. California Spanish moss [Marshak] 1245—ab
- ANTIBODIES See also Agglutination
  - mumps, agglutination test for, [Burnet] 67—ab
  - protective, against human epidemic influenza, 882
  - Rh. See *Rh Factor*
  - *test (neutralizing), for toxoplasmic choroiditis,* [Johnson] 647—ab
  - *where obtain antiserum for influenza A and* B for measuring in patient's serum? 810
- ANTICOAGULANTS See Blood coagulation, *Dicumarol, Heparin*
- ANTIDOTES, property of filtrates of Penicillium notatum, 33—E
  - *property of filtrates of Actinomyces griseus* 960
- ANTIGENS See Antibodies
  - *Rh See Rh Factor*
  - Vi See Typhoid
- ANTIHEMOPHILIC globulin, 1044
- ANTIHISTAMINE *See Benadryl,* Histamine
- ANTI-INFECTIVES See Bactericides, Sterilization Bacterial
- ANTI-LEWISITE, British· See BAL
- ANTIMONIATE of N-methyl glucamine treatment of kala-azar, 420
- ANTIMONY. See also Fuadin
  - compounds in tuberculosis, [Rose] 269—*ab*
  - lithium antimony treatment *of* filariasis, [Brown] 268—ab
- ANTIRETICULAR Cytotoxic Serum See Bogomolets
- ANTISEPTIC See also Bactericides, Sterilization, Bacterial
  - Golden Key Antiseptic Medicated Cream, 568—BI
- ANTISERUM See Influenza, Plague
- ANTITOXIN See Diphtheria, Scarlet Fever
- ANTI-URIC, 422—BI
- ANTIVIVISECTION. See *Animal Experimentation*
- ANTON'S Syndrome, [Brockman] 889—ab
- ANURIA See *Urine, suppression*
- ANUS See also Rectum
  - Artificial See Colostomy
  - *Fistula See Fistula*
  - perianal dyscrasias, [Granet] 127—ab
  - Pruritus See Pruritus
  - *Sphincter See Sphincter* Muscles
  - surgery, hemostatic dressings, [Rosser] 893—ab
- ANXIETY, latent, sodium amytal in testing [Susselman] 500—ab
  - Neurosis See Neurosis
- AORTA cholesterol content, [Faber] 70—ab, 652—ab
  - retrograde abdominal aortography, [Farinas] 272—ab

AORTIC ARCH, congenital vascular ring causes tracheal and esophageal obstruction, [Sweet] 1310—ab
AORTOGRAPHY: See Aorta
APHTHOUS FEVER, funds required for research, Mexico, 788—OS
APOPLEXY: See Brain hemorrhage
APPARATUS: See also Anesthesia; Medical Supplies; Roentgen Rays
  control of vaginal urinary incontinence due to fistulas, [Castallo] ★244
  impact decelerator, [Bierman & others] ★522
  used for tidal drainage or irrigation, [Bumpus & others] ★366; [MacNeill] 1237—C
APPENDECTOMY, preventive use of penicillin and sulfadiazine, [Griffin & others] ★907; [Brown] 1241—ab
  sequels: fecal fistulas, 1254
APPENDICITIS, [Moses] 205—ab
  acute, in aged, [Simpson] 1037—ab
  acute, pathogenesis, [Bohrod] 885—ab
  mortality, responsibility, Denmark, 123
  symptoms from excessively filled bladder, [Kisman] 1172—ab
  Treatment: See Appendectomy
APPENDICOSTOMY in chronic ulcerative colitis, [Yeomans] 272—ab
APPENDIX, intussusception [Miln] 208—ab
  Surgery: See Appendectomy; Appendicostomy
APPETITE, curbing with amphetamine sulfate in obesity, [Freed] ★371; [Kunstadter] 800—C
ARACHNIDISM: See Spider
ARACHNOIDITIS, diagnosis, National Neurologic Congress discuss, 1236
ARCHIVES: See American Medical Association, journals (special)
ARCHIVOS: See Journals
ARGENTAFFIN cells in pancreatic islet cell tumors, [Hultquist] 730—ab
ARGENTINEAN Congress of Surgery (17th), 343
ARMED FORCES: See Army; Navy; World War II
ARMS: See also Extremities; Fingers; Hand; Shoulder; Wrist
  Amputation: See Amputation
  blood pressure in, [Stewart] 424—ab
ARMSTRONG'S Drops, 568—BI
ARMY, Canadian, venereal disease incidence in, vs circumcision, [Wilson] 1243—ab
ARMY, UNITED STATES: See also World War II
  air base hospitals taken over by tuberculosis board, Fla., 791
  Air Force, liquid oxygen converter for breathing purposes, 559
  Air Surgeon, M. C. Grow; (Jeffries Award to) 408; (promoted) 1018
  aural rehabilitation center opened, Washington, D. C, 408
  Commendation: See World War II, Heroes
  construction program, 1947, 47
  deferment policy, physician veterans protest against, 184—OS
  dietitians needed, 408
  food service supervisors, 47
  Freer (Arden) retires, 329
  Hospitals: See Hospitals, army
  INDEX CATALOGUE of Surgeon General's Library, [Fishbein] ★103
  Institute of Pathology, (new director: Col. Dart) 252; (study on sudden death in young men) 325—E
  laboratory specialists, conference 1018
  medical consultants division; new head; Col. Dooling, 329
  medical corps, professional training, 946—OS
  Medical Department benefits of proposed legislation, 873—OS
  Medical Department deep x-ray centers for research and treatment, 329
  Medical Department, hearings on bill to establish medical service corps, 789
  Medical Department Research and Graduate School new name, 789
  medical exhibit open to public, 252
  medical general laboratory (406th) in Tokyo, 186
  Medical Library, 186; [Fishbein] ★311; (new director: Col. McNinch) 329 (microfilm service available to physicians) 789; (Association of Honorary Consultants) 1018; (acquires Chinese Golden Mirror of Medicine) 1018
  medical officers appointed, 329
  medical officers attending venereology classes, 186
  medical officers, lack of, is Army's chief problem, Eisenhower states, 1015
  medical officers lent to Veterans Administration, 113
  Medical Officers Separated from Service: See World War II, medical officers
  medical officers, training program, changes, 1218—E
  merger, research phase, House members criticize, 788—OS
  Military Academy, courses in mental hygiene proposed, 327—OS
  model of new artificial hand, 408
  Nurses: See Nurses
  occupies St. Luke's Hospital in Tokyo, 789
  Officers: See also Army, U. S., medical officers
ARMY, UNITED STATES—Continued
  officers (civilian), retirement of, 401—E
  personnel, annual physical examinations, 47
  psychiatrists confer at War Department, 408
  ration, cost increases 32%, 789
  soldiers' Christmas mail lost at sea, 486
  Specialized Training Reserve Program, 874—OS
  typhus in, after immunization, [Sadusk] ★1192
  venereal disease control council established, 486
  venereal disease, drive against vice, 112—OS
  week celebration, April 6-12, 486
  widows may claim terminal leave pay, 329
  Women's Medical Specialist Corps, 632—OS
ARRHENOMIMETIC Phenomenon: See Virilism
ARRHYTHMIA: See Auricular Fibrillation; Auricular Flutter
ARSENIC and ARSENIC COMPOUNDS: See also Arsphenamine; Melarsen
  toxicity, agranulocytosis, [Fisher] 1305—ab
  toxicity, BAL for, [Eagle] 136—ab [Sulzberger & Baer] ★293; [Cohen & others] ★749
  toxicity, methionine to prevent liver injury, (Council report), 107
  treatment of urinary infections, [Pool & Cook] ★585
ARSPHENAMINE, toxicity, bone marrow impairment, [Lachnit] 967—ab
  toxicity, acute yellow atrophy of liver, 1156—E
ART, Massachusetts Physicians Art Association, 1023
  Portraits: See Portraits (cross reference)
ARTERIES: See also Aorta; Blood Vessels; Ductus Arteriosus; Veins
  carotid (internal), primary thrombosis, [Miletti] 430—ab
  Coronary: See also Angina Pectoris
  coronary, coffee not contraindicated, 73
  coronary disease and flying, 898
  coronary disease, functional tests in diagnosis, 481
  coronary (left), anomalous origin, [Lyon] 886—ab
  Coronary, Occlusion: See also Thrombosis, coronary
  coronary occlusion (acute), treatment, 357
  coronary, sudden death in young men, 325—E; [Moritz] 721—ab
  Disease (Obliterative): See Thrombo-angiitis obliterans
  Embolism: See Embolism
  Fistula: See Fistula
  Inflammation: See Endarteritis; Periarteritis
  Pressure in: See Blood Pressure
  Pulmonary: See Embolism
  Pulmonary, Valve of: See Pulmonary Valve
  roentgen study, retrograde abdominal arteriography, [Farinas] 272—ab
  roentgen study, in renal diagnosis, [Wagner] 965—ab
  Sclerosis: See Arteriosclerosis
  surgery, anastomosis of a systemic artery to pulmonary artery for blue baby, 248—E
  tibial (anterior), acute spasm of, causes paralysis, [Holstein] 382—ab
  truncus arteriosus in infancy, [Taussig] 1303—ab
ARTERIOGRAPHY: See Arteries, roentgen study
ARTERIORRHAPHY, transvenous, for arteriovenous fistula, [Heringman & others] ★665
ARTERIOSCLEROSIS, American Society for Study of, being organized, 1025
  atherosclerosis in dogs, [Steiner] 133—ab
  coronary, sudden deaths of young soldiers, 325—E; [Moritz] 721—ab
  treatment, inject 1 (—) histidine monohydrochloride-sodium ascorbate [Wirtschafter & Widmann] ★604
  treatment of arteriosclerotic leg, 1320
  treatment, sympathectomy, [de Takats & Evoy] ★441
ARTERIOVENOUS Fistula: See Fistula
ARTERITIS: See Endarteritis; Periarteritis
ARTHRITIS: See also Rheumatism; Medicolegal Abstracts at end of letter M
  American Anti-Arthritis Association, organized, 1230
  Chronic or Atrophic: See Arthritis, rheumatoid
  Hypertrophic: See Osteoarthritis
  Marie-Strümpell: See Spine, arthritis
  muscle lesions in, [Gibson] 67—ab
  polyarthritis (acute), epidemic, [Goswell] 1246—ab
  polyarthritis, cardiac disorders in, [Appelgren] 895—ab
  rheumatoid, copper salts for, [Forestier] 1317—ab
  rheumatoid, Empire Rheumatism Council study cause of, 341
  rheumatoid, gold poisoning, BAL for, [Cohen & others] ★749; [Ragan & Boots] ★752; Lockie & others] ★754
  rheumatoid, heart in, [Rogen] 1315—ab
  rheumatoid, neostigmine for muscle spasm in, [Wramner] 1248—ab
  rheumatoid, pleuropneumonia-like organisms relation to, [Wallerstein] 137—ab
ARTHRITIS—Continued
  Spine: See Spine
  suppurative, intra-articular penicillin for, [Tucker] 892—ab
  treatment, histamine, 212
ARTHROPOD-borne virus types of encephalitis, [Meyer & Eddie] ★827
ARTHROPLASTY, vitallium mold, in femur fractures, [Smith-Petersen] 1308—ab
ARTICLES: See also Journals
  scientific papers, censoring, 1900, [Fishbein] ★535
ARTIFICIAL Limbs: See Limbs, Artificial
  Pneumothorax: See Pneumothorax, Artificial
  Teeth: See Teeth
ASBESTOS, effect on lungs of rabbits, [King] 208—ab
ASBESTOSIS: See Pneumonoconiosis
ASCARIASIS, surgical aspects, [Barber] 1315—ab
ASCARIS of common bile duct, [Guzman] 804—ab
ASCHHEIM-Zondek Test: See Pregnancy, diagnosis
ASCITES, surgical treatment, [Crosby] 203—ab
  intravenous liver extract therapy of cirrhosis effect on, [Labby & others] ★1185
  transfusion of ascitic liquid in cirrhosis, [Acevedo Olvera] 1317—ab
ASCORBATE: See Calcium ascorbate; Sodium ascorbate
ASCORBIC Acid: See Acid
ASPHYXIA: See also Carbon Monoxide poisoning
  fatal plastic bib, 121
  Local: See Raynaud's Disease
ASPIRATION type of congenital tuberculosis, [Pagel] 141—ab
  of amniotic fluid by fetus, [Windle & Becker] 125—C
ASPIRIN: See Acid, acetylsalicylic
ASSAULT and Battery: See Medicolegal Abstracts at end of letter M
ASSOCIATION: See also American Association; American Medical Association; list of Societies at end of letter S
  of American Medical Colleges (survey of medical schools) 109—E, 945—OS; (plan for uniform intern placement) 267
  of Honorary Consultants to Army Medical Library, 1018
ASTHENIA: See also Myasthenia gravis; Neurasthenia
  neurocirculatory, ocular manifestations, [Harrington] ★670
ASTHMA, etiology, bee sting, [Reed] 68—ab
  etiology, sulfathiazole, [Rosberg] 1248—ab
  high altitude and, traveling in airplane harmful to patient? 812
  Himrod's Asthma Powder, 883—BI
  treatment, procaine intravenously, [Durieu] 729—ab
  treatment, radon nasopharyngeal applicator in children, [Ward & others] ★1060
ATABRINE: See Quinacrine
ATAXIA: See Tabes Dorsalis
ATELECTASIS: See Lungs collapse
ATHEROMATOSIS and cholesterol deposition, [Faber] 70—ab
ATHEROSCLEROSIS: See Arteriosclerosis
ATHLETICS: See Exercise
ATKINSON, WILLIAM B, A.M.A. Secretary, [Fishbein] ★102; ★238; (battle over in 1895) ★465
ATLANTIC City Session: See American Medical Association
ATMOSPHERE: See Air
ATOMIC ENERGY and your future health, [Lyon] 725—ab
  fission products, (Council discusses), 850
  medical forum, 52
  President's Commission, 327—OS
  scientists report on effect of radiation at *Hiroshima and Nagasaki, 1159—OS*
  treatment of incurable diseases, 631—ab
  treatment of malignant tumors, [Warren] ★462
  warfare, medical aspects, 1225
ATROCITIES committed by German physicians, (Dr. Ivy's report on), 35; (ethical responsibility of German profession) [Wertham] 645—C
ATROPHY: See Liver; Nerves, optic; Testis
  Muscular: See Dystrophy
  Sudeck's: See Osteoporosis, post-traumatic
ATROPINE sulfate to prevent post-traumatic pneumonia, [Phillips] ★161
ATTORNEYS, doctors asked to join with, in combating court problems, 631—OS
AUDIOMETRY: See Deafness, diagnosis
AURICULAR FIBRILLATION, transitory, [Jervell] 504—ab
AURICULAR FLUTTER, transitory, [Jervell] 504—ab
  treatment, lanatoside C and quinidine sulfate, [Tandowsky] 424—ab
AURINE, now sold as Ourine, 422—BI
AUROTHERAPY: See Gold
AUTOINFECTION: See Infection
AUTOMATISM: See Mental Tension

- AUTOMOBILES, A.M.A. *emblem for*, 1918, [Fishbein] *843
  - liquor offenses and driving while intoxicated FBI report, 416
  - number of J.A.M.A. in 1916, [Fishbein] *761
  - priorities for physicinas (Joint Committee report), 44
  - tires (old) mosquitoes in, from Pacific, 559; [Pratt] 725—ab
  - *traffic regulations* for car-driving amputees, 1219—OS
  - traffic safety awards, 1294
  - trailer camps, clinics for children in, Calif., 706
- AUTOPSIES: See also Coroners
  - on Okinawans, [Steiner] 133—ab
  - performance in approved intern hospitals; also hospitals having highest rates, *1082
- AUTOVACCINATION: See Vaccination
- AVERSION Treatment: See Alcoholism
- AVIATION: See also Altitude, high
  - acceleration, protect against effects, [Behnke] *454
  - Air Surgeon, M. C. Grow, 408; 1018
  - Airborne Medical Society formed, England, 261
  - airplane accidents, National Safety Council report, 564
  - airplane *accidents*, protection against injury in, [Behnke] *455
  - airplane tires (old) filled with water, mosquitoes *transported* by, 559; [Pratt] 725
  - coronary disease and flying, 898
  - *DDT* sprayed *by*, *Florida*, 489
  - decompression sickness and alveolar carbon dioxide tension, [Hodes] 719—ab
  - decompression sickness, diet and exercise affect bends, [Burkhardt & others] *373
  - decompression sickness, drug prevention, [Williams] 1308—ab
  - *dermatoses* in *aircraft workers from chromates*, [Ellis] 1244—ab
  - doctor makes mercy flights piloting his own plane, 788—OS
  - flight nurses graduate, Texas, 1018
  - flights at high altitude, [Behnke] *450
  - flying personnel, glucose vs. anoxia in, 776—E
  - high altitude, and asthma; traveling in airplane harmful? 812
  - insecticidal sprays in aircraft, [Garnham] 140—ab
  - insects survive flight into ionosphere by rocket, 874—OS
  - John Jeffries Award to Brig. Gen. Grow, 408
  - liquid oxygen converter for breathing purposes, 559
  - medicine in Sweden, 421
  - medicine research by War Department, 950
  - medicine, School of, of U. S. Navy, 488
  - ocular manifestations of psychosomatic disorders, [Harrington] *670
  - passenger comfort in, [Tuttle] 1308—ab
  - pilots, blood carboxyhemoglobin concentration and hypoxia in, [Pitts] *1304—ab*
  - pilots, effect of amphetamine sulfate on, [Newman] 270—ab
  - pilots, restraining harness for, impact decelerator, [Bierman & others] *522
- AVITAMINOSIS: See Vitamins, deficiency; Vitamins B Complex; etc.
- AVOCATIONS: See Physicians, avocations
- AWARDS: See Prizes
  - for Military Service: See World War II, Heroes
- AYERST, McKenna and Harrison Fellowships: See Fellowships
- AZOTEMIA: See Uremia

B

- BACILLUS: See Bacteria
- BACITRACIN treatment of surgical infections, [Meleney & Johnson] *675
- BACK: See Spine
  - Pain: See Backache
- BACKACHE: See also Sciatica
  - treatment, adhesive strapping for low back pain, [Schaubel] 648—ab
  - treatment, curare for muscle spasm in acute low back pain, [Schlesinger] 499—ab
- BACON, vegetables with, Beech-Nut, 937
- BACON LECTURE: See Lectures
- BACTEREMIA: See Meningococcemia
- BACTERIA: See also Bacteriology; Pneumococcus; Staphylococcus; Tubercle Bacillus; etc., under names of organs
  - Abortus Infection: See Brucellosis
  - acid *fast (false) fat-coated* saprophytes in wound, [Berczeller] 804—ab
  - bacitracin sensitive, [Meleney & Johnson] *679
  - Coli: See Escherichia coli
  - culture medium (urea) to differentiate Proteus and paracolon, [Christensen] 136—ab
  - Ducrey's: See Chancroid
  - Friedlander: See Klebsiella pneumoniae
  - in Air: See Air disinfection
  - in Blood: See Meningococcemia
  - in open wounds, [Rustigian & Cipriani] *224
  - Infection: See Infection
  - Lactobacillus Casei Factor (synthetic): See Acid, folic
- BACTERIA—Continued
  - Lysis: See Bacteriolysis
  - Mallei: See Malleomyces mallei
  - Proteus: See Proteus
  - Pyocyaneus: See Pseudomonas aeruginosa
  - streptomycin dosage required to inhibit, [Adcock & Plumb] *583
  - subtilis in vaginal cultures, 1320
  - Tularense: See Tularemia
- BACTERICIDES: See also Sterilization, Bacterial
  - detergent for cooking and eating utensils, [Guiteras] 803—ab
- BACTERIOLOGIC WARFARE: See Biologic Warfare
- BACTERIOLOGY: See also Bacteria
  - residency and fellowship programs must provide for training in, 697—E; 717
- BACTERIOLYSIS, initiated by notalysine, [Hutter] 1247—ab
- BACTERIUM: See Bacteria
- BAKER, NORMAN, cancer charlatan, 774—E; (correction) 957
- BAKERS: See Bread
- BAL, development and use; especially in arsenical dermatitis, [Sulzberger & Baer] *293
  - *treatment, clinical uses, [Eagle]* 136—ab
  - treatment of acute gold and arsenic poisoning, [Cohen & others] *749
  - treatment of acute mercury poisoning, [Longcope] 136—ab
  - treatment of gold dermatitides, [Ragan & Boots] *752
  - treatment of reactions to gold, [Lockie & others] *754
- BALDNESS: See Alopecia
- BALL-Donnell-Taft Smith Bill: See Taft
- BALLOON, rubber, dermatitis due to, 1174
- BALM, 422—BI
- BANDAGES: See Dressings
- BANK (therapeutic): See Blood Transfusion; Bones; Eyes
- BANKS: See Investments
- BANTING, FREDERICK, liberty ship named in *honor of*, 1294
- BARBITURATES: See also Pentobarbital; Pentothal Sodium; Phenobarbital
  - *alcohol and, synergism between*, [Ramsey] 350—ab
  - alcoholic beverages doped with, 1253
  - amphetamine sulfate and, antagonism of, 280
  - poisoning (acute), gastric lavage in, 545—E
  - sleeping pills, federal officials puzzled by large U. S. *consumption*, 405—OS
  - tests for; effects of prolonged use on sexual function in men? 279
  - treatment, convulsive seizures after withdrawal, [Osgood] *104
  - treatment, intravenous, for oral surgery, 812
- BARLEY cereal, Gerber's Ready to Serve, 937
- BARNARD Hospital Lecture: See Lectures
- BARRÉ-Guillain Syndrome: See Guillain
- BARTHOLIN'S GLANDS, and Cowper's gland, analogy between, (reply) [Movitt] 734
  - infection of cyst; penicillin or excision for, 1253
- BASAL METABOLISM: See Metabolism
- BASEDOW'S Disease: See Goiter, Toxic
- BASIC ENDOCRINES nostrums, 422—BI
- BASIC SCIENCE, course, Ill., 49
  - residency and fellowship programs must provide training in, Council decision, 697—E; 717
  - state board (composite) and, [Various authors] 630—ab
- BATES Vitamin Preparations, 264—BI
- BATHS: See Health resorts; Hydrotherapy
  - Mineral Water: See Mineral water
- BATTLE Casualties: See World War II, casualties
- BCG Vaccination: See Tuberculosis, immunization
- BEARD, MARY, death, 191
- BEARD, folliculitis of, penicillin for, [Hopkins] 886—ab
- BEAUTY CULTURE: See Cosmetics
- BEAWUN Vitamin B_1 Tablets, 568—BI
- BEBEERINE dimethylether methochloride, curare substitute, Brazil, 882
- BED Capacity: See Hospitals
  - Rest, Early rising after operation: See Convalescence
  - Wetting: See Urine incontinence
- BEDSON, S. P., Chadwick lecture on laboratory diagnosis of virus infections, 1299
- BEES, sting, asthma and urticaria after, [Reed] 68—ab
- BEETS, tint or color urine blood red? 1254
- BEHAVIOR: See Mental Hygiene
- BEHCET'S syndrome, [Thomas] 1246—ab
- BELGIUM, Medical Days of Brussels, 263
  - radium given to Switzerland, 118
- BELL'S Palsy: See Neuropathy of facial nerve
- BELTONE Hearing Aid, 543
- BENADRYL, histamine antagonist, [Friedlaender] 1309—ab
  - hypertension and, 812
  - toxicity, danger of self medication and large dosage, [Borman] *394
  - toxicity, prolonged reaction, histamine intravenously, [Schwartzberg & Willerson] *393; [David & Karr] 1301—C
- BENADRYL—Continued
  - toxicity, unusual reaction, [Geiger & others] *392
  - toxicity, unusual side effect, [Weil] *393
  - treatment of allergic conditions, [Brown] 207—ab
  - treatment of hypersensitivity to sunlight and *dysmenorrhea*, *[Tyson]* 137—ab
  - treatment of lupus erythematosus, 213
  - treatment of penicillin urticaria, [Willcox] 428—ab; [Callaway] 891—ab; [Pillsbury & others] *1255
  - treatment of serum sickness, [Peterson & Bishop] *1277
- BENCE-Jones Protein: See Protein
- "BENDS" at high altitude, diet and exercise affect, [Burkhardt & others] *373
- BENZEDRINE: See Amphetamine
- BENZOCAINE: See Ethyl Aminobenzoate
- BENZOHYDRYL Alkamine Ethers: See Benadryl
- BEQUESTS: See Donations (cross reference)
- BERIBERI, cerebral, Wernicke's encephalopathy, [de Wardener] 1246—ab
- BESNIER-Boeck-Schaumann Disease: See Sarcoidosis
- BESREDKA, cancer treatment by autovaccination, 111—E; [Gross] 800—C
- BEST, CHARLES H., awarded honorary degree, Netherlands, 712
- BETATRONS treatment of cancer, proposed erection of, 556—OS
- BEVAN, ANEURIN, conflict on National Health Service Act, 643; (B.M.A. decides to negotiate with Minister of Health) 797; 880
- BEVAN, ARTHUR DEAN, surgical journal, 1919, [Fishbein] *845
- BEVERAGES: See also Coffee; Milk; Water
  - Alcoholic: See Alcohol; Whisky
  - containers, cadmium lined, danger of, [Monnet] 729—ab
- BEVERIDGE Plan: See National Health Service Act
- BIB, plastic, *fatality from*, 121
- BICARBONATE of Soda: See Sodium bicarbonate
- BICYCLE, moral hygiene, 1896, [Fishbein] *468
- BIERMER'S Anemia: See Anemia, Pernicious
- BIGG'S *Lecture*: See *Lectures*
- BILE Acid: See Acid, dehydrocholic
  - secretion, effects of cholagogues on coronary occlusion, 146
- BILE DUCTS: See also Bile; Biliary Tract; Gallbladder; Liver
  - ascaris, [Guzman] 804—ab
  - calculi, diagnosis, [Mirizzi] 730—ab
- BILHARZIASIS: See Schistosomiasis
- BILIARY TRACT: See also Bile Ducts; Gallbladder; Liver
  - drainage to relieve pruritus, [Varco] 1314—ab
  - obstruction, proved in jaundice, [Snell] *1176; *1177
  - obstruction (neoplastic), surgical treatment, [Stevens] 722—ab
  - surgery of lower, [Crile] 648—ab
  - surgery, postoperative dyskinesia, [Colp] 890—ab
- BILIRUBIN in Blood: See Blood
- BILLINGS, FRANK, active in 1899, [Fishbein] *475
  - personal attack by Dr. Ochsner, state medicine, 1921, [Fishbein] *925
- BILLS, Doctor's: See Fees
  - Legislative: See Laws and Legislation
- BIOCHEMISTRY, *recent developments*, Netherlands, 56
  - residency and fellowship training in, 697—E; 717
- BIOLOGIC PRODUCTS: See also Serum; Toxin; Vaccines
  - federal regulation, revision and expansion, 855—E
- BIOLOGIC WARFARE, forum, 563
- BIOPSIES: See Liver
- BIRDS, diagnosis of psittacosis in children, [Meyer & Eddie] *824
  - captive wild, diet and tuberculosis in, [Ratcliffe] 888—ab
- BIRTH: See Labor
  - in Hospitals: See Hospitals, maternity
  - Multiple: See Twins
  - Rate: See Vital Statistics
  - *Weight*: See Infants, Newborn, weight
- BIRTH CONTROL: See Contraception
- BISMUTH salt of diallylacetic acid, deaths from Analbis Suppositories, 852—E; [Weinstein] 962—C
  - subnitrate, *methemoglobinemia from; treatment* with methylene blue, [Wallace] *1280
  - subsalicylate in oil with chlorobutanol, N.N.R., [Abbott] 937
- BITE: See Spider
- BLACKWATER FEVER, Malarial: See Malaria
- BLADDER: See also Urinary System
  - cancer and prostatic carcinoma, 279
  - cervicocystopexy, new method, 56
  - excessively filled, causes appendicitis symptoms,, [Kisman] 1172—ab
  - fetal bones in, *from* ectopic pregnancy, [Forshaw] 429—ab
  - Fistula: See Fistula
  - inflammation and edema, cystoscopic finding in fistula, [Barnes & Hill] *456

BLADDER—Continued
  paralysis in spinal cord injury, [Bumpus & others] [illegible] for tidal drainage [illegible] 1237—C
  paralysis, [illegible] 'or, [Emmett] 206—ab
BLECKWENN, WILLIAM J, memorial fund, 1230
BLEEDERS See Hemophilia
BLEEDING See Hemorrhage
BLEPHAROCONJUNCTIVITIS See Eyelids
BLINDNESS See also Conjunctivitis, infectious acute in newborn, Vision
  amaurosis fugax [Harrington] ★670
  amaurosis in perforating and bleeding duodenal ulcer, [Forgarasi] 1248—ab
  angioscotoma in prolonged mild anoxia, [Smith] 1308—ab
  brucellosis causes, [Agin] 1312—ab
  denial of, by patients, (Anton's syndrome), [Brockman] 889—ab
  in congenital glaucoma, [Barkan] ★530
  National Society for Prevention of, (prize for paper on glaucoma) 238, (scholarships) 794
  nutritional amblyopia in liberated prisoners, *[Bloom] 62—ab*
  Seeing Eye Dog hoax, 191
BLISS, RAYMOND W, tribute to young physician by, 481—E
BLOOD See also Medicolegal Abstracts at end of letter M
  Bacteria in See Meningococcemia
  Banks See Blood Transfusion
  barbiturates in, estimation, 279
  bilirubin in differentiating peptic ulcer from portal cirrhosis, [Navarro] 351—ab
  bilirubin in intravenous liver extract therapy of cirrhosis, [Labby & others] ★1184
  calcium in multiple myeloma, [Bayrd & Heck] ★153
  carboxyhemoglobin concentration in aviators, [Pitts] 1304—ab
  Cells See also Erythrocytes, Leukocytes
  cells (human, powdered) for ulcers of extremities, [Anderson] 885—ab
  cells in late pregnancy and puerperium, 1254
  cholesterol, diet for hypercholesteremia, 508
  cholesterol, relation to cholesterol content of aorta, [Faber] 652—ab
  Circulation See also Cardiovascular System
  circulation, antitoxin in, in diphtheria, [Ipsen] 1243—ab
  circulation time, parenteral vitamin B to determine, [Swenson] 424—ab
  Clot See Blood coagulation, Phlebothrombosis; Thrombophlebitis, Thrombosis
  Clotting See Blood coagulation
  coagulant penicillin, [Fradà] 354—ab, [Pelz] 800—C
  Coagulation See also Blood prothrombin
  Coagulation, Anticoagulant See also Dicumarol, Heparin
  coagulation, anticoagulants and coronary thrombosis, 970
  coagulation, anticoagulants effect on penicillin in endocarditis, [Priest] 427—ab
  coagulation, changes after coronary thrombosis, [Ogura] 137—ab
  coagulation, property of blood of hemophiliac, [Chevallier] 353—ab
  cytotoxic factor in, in cancer, [Roskin] 1038—ab
  Donor See Blood Transfusion
  Dyscrasia See also Agranulocytosis, Acute, Anemia, Anemia, Pernicious, Erythroblastosis, Fetal, Leukemia, Polycythemia
  dyscrasias, eye changes in, [Tassman] 1306—ab
  Fibrin See Fibrin
  Flow See Blood circulation
  formation, folic acid panhematopoietic stimulus, [Doan] 128—ab
  group reference laboratory, England 566
  group tests of newborn, [Davidsohn] 345—C
  Groups O (Universal donors) See Blood Transfusion donor
  Groups, Rh Factor See Rh Factor
  Hematology Research Foundation, 412
  Hemoglobin See Hemoglobin
  in Feces See Feces
  in infectious mononucleosis, [Limarzi] 201—ab
  in silicosis, [Heimann] 1244—ab
  Infection See Meningococcemia
  Injection of Whole Blood or Its Derivatives See Blood Transfusion
  Loss See Hemorrhage
  maternal and fetal oxygen pressure gradient between, [Barron] 207—ab
  Menstrual See Menstruation
  Methemoglobin in See Methemoglobinemia
  penicillin levels, 145, (emulsions will prolong) [Putnam] 1174
  phosphatase, estimation, [Herbert] 69—ab
  phosphate, hyperphosphatemia in renal osteodystrophy, [Norman & others] ★771
  phosphorus and phosphatase in multiple myeloma, [Bayrd & Heck] ★153
  picture in late pregnancy and puerperium, 1254
  Plasma See under various headings of Blood, Blood Transfusion, Serum
BLOOD—*Continued*
  Platelets See Purpura, thrombopenic
  potassium intoxication, [Finch] 61—ab
  Preservation See Blood Transfusion, blood banks
  Preservative See Blood Transfusion of plasma
  pressor substance in renal hypertension, [Kreutzfeldt] 431—ab
  Pressure See BLOOD PRESSURE
  proteins, hyperproteinemia, causes of, [Bayrd & Heck] ★153
  proteins in infectious hepatitis, [Armas-Cruz] 1247—ab; [Martin] 1315—ab
  proteins in intravenous liver extract therapy of cirrhosis, [Labby & others] ★1184
  proteins (plasma), wound shock, [Stewart] ★216
  Prothrombin See also Blood coagulation
  prothrombin activity, methylxanthines effect on [Rieben] 69—ab
  prothrombin, hypoprothrombinemia refractory to vitamin K, [Snell] ★1178
  quinacrine, plasma concentrations, [Becker] 202—ab
  sedimentation in multiple myeloma, [Bayrd & Heck] ★151
  sedimentation rate in brucellosis, 1254
  Serum See various subheads under Blood; Blood Transfusion, Serum
  Spitting Up See Hemoptysis
  Sugar See also Diabetes Mellitus
  sugar, differential diagnosis of glycosuria, 278
  sugar, hypoglycemia sequels, [Boulin] 1038—ab
  sugar, hypoglycemia, taste and food selection in, [Mayer-Gross] 573—ab
  Sugar, Hypoglycemic Shock (therapeutic). See *Insulin shock*
  sugar, sucrose tolerance tests, [O'Brien & Higgins] 197—C
  Supply See Blood circulation
  Tests See Syphilis serodiagnosis
  Thrombin See Thrombin
  Transfusion See BLOOD TRANSFUSION
  Universal See Blood Transfusion
  Urea See also Uremia
  urea nitrogen, low, 357
  Volume See also Blood circulation
  volume data on severely wounded soldiers, [Stewart] ★217
  Vomiting of See Hematemesis
BLOOD PRESSURE, age influence on, [Russek] 127—ab
  flying at high altitude effect on, [Behnke] ★450
  high, American Foundation for, 117
  high, antihistamine drugs and, 812
  high, calcium intake and [Kesson] 574—ab
  high, cerebral hemorrhage and muscular exercise, 1320
  high, cytral for, 1235
  high, electrocardiogram in, [Filley] 270—ab
  high essential, renin in, [Taquini] 61—ab
  high, Levy Foundation for research on, 490
  high, malignant, [Selye] 64—ab
  high malignant, pheochromocytoma of adrenal medulla cause of, [Washington] 724—ab
  high, mannitol hexanitrate for, 1042
  high, nephrectomy for, with unilateral renal disease, [Ratliff & others] ★296
  high, pitressin for, 898
  high renal, pressor substance in blood [Kreutzfeldt] 431—ab
  high, salt and water metabolism disturbance in, [Perera] 499—ab
  high, splanchnicectomy for, late results, [Fontaine] 429—ab
  high, venesection for, 1253
  in arms and legs [Stewart] 424—ab
BLOOD TRANSFUSION, blood bank, American Red Cross program, 415, 945—OS
  blood donor (dangerous universal), fatal use of, [Morgan] 805—ab
  blood donor service (new), N Y, 955
  blood donor service (voluntary), 707
  death in infant after, 811
  donors, sex of recipients and, [Hustin] 1038—ab
  for hemoglobinuric fevers (blackwater fever) in malaria, [Julliard] 729—ab
  in management of wounds, [Snyder] ★219
  malaria transmitted by, danger, [Coggeshall] 1238—C
  of plasma, toxicity of phenyl-mercuric borate used as preservative, 214
  of plasma vs whole blood in craniocerebral injuries, 214
  surplus sets sale of, 951
BLOOD VESSELS See also Aorta, Arteries; Capillaries, Cardiovascular System, Veins
  cholesterol deposition and atheromatosis, [Faber] 70—ab
  Disease See also Arteriosclerosis, Raynaud's Disease, Thromboangiitis obliterans, Varicose Veins
  disease of brain stem and cerebellum, *[Skogland]* 201—ab
  disease (peripheral), inject 1 (—) histidine monohydrochloride-sodium ascorbate for, [Wirtschafter & Widmann] ★604
  disease tetraethylammonium ion for, [Berry] 66—ab
BLOOD VESSELS—Continued
  injuries influencing incidence of gangrene, [Thomas] 650—ab
  intracranial, angiographic diagnosis, [List] 272—ab
  sclerosis, sympathectomy for, [de Takats & Evoy] ★441
  surgery, Society for Vascular Surgery organized, 257
BLOODLETTING See Venesection
BLOOMFIELD, JOHN J, temporary assignment in Bolivia, 488
BLUE CROSS See Hospitals, expense insurance
BOARD. See also under specific names as American Board, Indiana Board, National Board, Specialties, State Board
  of Health See Health
  of Roentgenology of Veterans Administration, [Birkelo & others] ★359, 399—E
  of Trustees See American Medical Association
BOATS. See Ships
BOBBS, JOHN S, first operation for gallstones, 1905, [Fishbein] ★683
BODY See also Splanchnoptosis
  Build See Constitution
  Dead See Autopsies, Embalming
  Growth of See Growth
  Heat Production See Metabolism, basal
  Lenin's, conservation, 1235
  measurements in school health program, [Stuart] 719—ab
  protection, restraining harness for aircraft pilots, [Bierman & others] ★522
  radium content, determine to prevent radium poisoning, [Hess] 1305—ab
  Temperature See Fever, Temperature, Body
  Weight See also Infants, Newborn, Obesity
  weight, different responses to same provocation, [Johnson] 1238—C
  weight, gain in pregnancy, relation to weight of newborn, [Klein] 129—ab
  what is "normal"? 1011—E
BOECK'S Sarcoid See Sarcoidosis
BOGOMOLETS, ALEXANDER death; antireticular cytotoxic serum (ACS), 123
BOILS See Carbuncle, Furunculosis
BONDS See Investments
BONE MARROW See also Myeloma; Osteomyelitis
  Fibrosis of See Osteosclerosis myelofibrosis
  impairment by arsphenamine treatment, [Lachnit] 967—ab
  in infectious mononucleosis, [Limarzi] 201—ab
  medullary hypoplasia, [Alvarez] 1248—ab
BONES See also Cartilage, Cranium, Joints; Orthopedics, Ribs, Osteitis, Osteo—, Spine
  age determined by x-ray, [Dutton] 965—ab
  Atrophy (Sudeck's) See Osteoporosis, posttraumatic
  bank established, Pa, 1024
  cancer metastatic from prostate, secondary myelofibrosis, [Bersack] 131—ab
  chambers, ionization measurements with, [Stenstrom] 887—ab
  Dislocation See Dislocation (cross reference)
  Dystrophy See Osteodystrophy
  eosinophilic granuloma, [Dundon] 273—ab; 1284—E
  eosinophilic granuloma, role of allergy, 776—E
  fetal, in bladder from ectopic pregnancy, [Forshaw] 429—ab
  Fractures See Fractures (cross reference)
  grafts reinforcement, [Carpenter] 349—ab
  growth and vitamin A, [Mellanby] 1316—ab
  lability of, mobilization of minerals and salts from skeleton, 110—E
  skeleton changes in renal osteodystrophy, [Norman & others] ★771
  surgery, reconstruction of bony defects of face [Macomber] 649—ab
  surgery, subtrochanteric osteotomy in poliomyelitis, [Irwin] ★231
  tuberculosis (skeletal), lung lesions in, [Mann] 502—ab
  tumors, primary sarcoma, [Shallow] 966—ab
BOOKS See also Journals; Library, Book Notices at end of letter B
  center for war devastated libraries, 878
  medical (American), lack of in Italy, 644
  removal of odor from [Munkelt] 344—C
BORDEN Award See Prizes
BOROWSKAJA method for colloidal gold liver function test, 734
BORRELIA vincenti See Angina, Vincent's
BORTZ, EDWARD L, succeeds to A M A presidency, 1012—E
BOTALLO'S DUCT See Ductus arteriosus
BOTTLES See Label
BOUILLAUD'S Disease: See Endocarditis
BOUTONNEUSE fever, differentiating from rickettsialpox, [Greenberg & others] ★904
BOWDITCH, HENRY I, address, 1877, [Fishbein] ★175
BOWEL Movement See Feces
BOWELS See Intestines
BOWMAN GRAY School, gifts to, 707
BOYS See Adolescence
BRADY, WILLIAM, fallacies on pasteurization of milk, 249—E

BRAIN: See also Cerebellum; Cranium; Head; Nervous System
  abscess, coccidioidal, [Rhoden] 723—ab
  beriberi, [de Wardener] 1246—ab
  concussion, diagnosis of postconcussional state, [Beck] 726—ab
  concussion (mild), vertigo after; cause and treatment, 434
  Disease See also Epilepsy; Parkinsonism
  disease, dynamite encephalosis, [Gerle] 142—ab
  electroencephalogram in head injuries, [Laufer] 724—ab
  electroencephalographers meet in Montreal, 337
  electroencephalographic tracings, dysrhythmia in psychopaths, [Simon] 721—ab
  electroencephalography in eclampsia, [Whitacre & others] ★445
  electroencephalography technicians' needed, 113
  Hemorrhage: See also Polioencephalitis, hemorrhagic
  hemorrhage and muscular exertion, 1320
  hemorrhage, sudden death in young men, 325—E, [Moritz] 721—ab
  hemorrhage, treatment; brain surgery indicated? 214
  Inflammation See Encephalitis, Meningoencephalitis
  Injury: See also Brain concussion, Cerebellum
  injury, late effects, 655
  injury, war wounds of ventricles, [Pitts] 1240—ab
  intracranial pneumograms, [Schneider] 650—ab
  lesions, angiographic diagnosis, [List] 272—ab
  mouse brain vaccine, treatment of epidemic encephalitis, [Sabin] ★281
  porencephaly, [Pendergrass] 130—ab
  stem, vascular lesions of, [Skogland] 201—ab
  surgery, bilateral frontal lobe leukotomy in mental disorders, [McKenzie] 134—ab
  surgery, cortical excisions to relieve intractable pain, [Horrax] 273—ab
  surgery in syringobulbia and syringopontia, [Cramer] 133—ab
  surgery indicated in cerebral hemorrhage? 214
  surgery, prefrontal leukotomy in mental disorders, results, England, 1234
  surgery, prefontal leukotomy in 100 female patients, [Parker] 274—ab
  surgery, psychosurgery for unbearable pain, [Watts] 891—ab
  surgery, section of frontal lobe pathways in mental depression, [Van Wagenen] 273—ab
  Syphilis See Neurosyphilis
  tissue extract action on staphylococcus infections, [Nutini] 803—ab
  Wounds: See Brain concussion, Brain injury
BRAISTED, WILLIAM C, A. M A. president's address lasted 2½ hours, [Fishbein] ★923
BRANCHIAL VESTIGES, primary cancer of neck, [Wieberdink] 208—ab
BRAUN, WILL C, role in history of A M. A., 1902-1904, [Fishbein] ★605, ★935
BREAD, lead intoxication from, 644
  St John's (powdered), in diet for diarrhea, [Rohmer] 729—ab
  whole wheat, deleterious factor in, stimulates growth of pneumococcus, 401—E
BREAKFAST Foods See Cereals Products
BREAST abscess, penicillin for, [Florey] 727—ab
  cancer and ovarian hormone, 643
  cancer, radiation for, [Kaplan] 1245—ab
  Feeding See Infants, feeding
  inflammation (chronic cystic), treatment, 655
  inflammation (puerperal), penicillin for, [Taylor] 428—ab
  Milk: See Milk, human
  striae, diagnostic significance, 358
  swelling (periodic), in men, 146
  tumors, Brodie's disease [Aiken] 207—ab
  tumors, sarcoma in women, [Brachetto-Brian] 1317—ab
BREATHING: See Respiration
BREEDING: See Eugenics
BRICK, fireproof, pneumonoconiosis in cutters of, 644
BRIDGE championships, doctor ties for third place, 788—OS
BRITISH: See also England; Royal; World War II
  Anti-Lewisite: See BAL
  Empire Cancer Campaign, (report on cancer research), 341, 566
  Empire Rheumatism Council (10th anniversary), 52, (investigate cause of rheumatoid arthritis) 341
  health and tuberculosis conference, 709
  Journal of Nutrition: See Journals
  Medical Association, (A M A. discusses establishment of *British Medical Journal* by, in 1880) [Fishbein] ★236; ★237; (conflict on National Health Service Act) 261; 419; 495; 643; 797, 880; (abstract periodicals from England) 480—E; (trouble in publishing their *Journal* in February, 1947) 698—E; 880
BRITISH—Continued
  Medical Bulletin: See Journals
  Medical Journal: See Journals
  Medical Research Council: See Medical Research Council
  National Health Service Act: See National Health Service Act
  National Institute for Blind praises Helen Keller, 261
  Troops See World War II
BROADCASTING: See Radio
BRODIE'S Disease of breast, [Aiken] 207—ab
BROMIDE, mecholyl, toxicity, used as stimulant to smooth muscle of colon, 655
  poisoning, transitory schizophrenias in, [Levin] 130—ab
BROMSULPHALEIN: See Sulfobromophthalein Sodium
BRONCHI See Bronchus
BRONCHIAL Asthma See Asthma
BRONCHIECTASIS, treatment, penicillin, [Harwood] 1172—ab
BRONCHITIS. See Laryngotracheobronchitis
  Tuberculous: See Bronchus, tuberculosis
BRONCHUS, tracheobronchial drainage, 4 methods, [Foregger] ★1200
  tuberculosis, treatment, [Secretan] 430—ab
  tumors, adenoma, lung resection, [Tricerri] 895—ab
  tumors, adenomas, [Holley] 573—ab
BRONZE Star: See World War II, Heroes
BROUGHTON, J. M., address at National Conference on Rural Health, 866—ab
BROWN, CLARENCE J., U. S. Navy assignments, 488
BROWN Fat. See Fat
BRUCELLA abortus, transmission in milk, 1042
BRUCELLOSIS, blindness caused by, [Agin] 1312—ab
  blood sedimentation rate affected by, 1254
  chronic, [Moss] 135—ab
  Inter-American Congress on, (1st), 118; (proceedings) 798
  pregnancy and, 357
  Puerto Rico, [Hernandez Morales] 204—ab
  survey, Ind, 875
  treatment, Castaneda vaccine (MBP), 656
BRUSSELL, JAMES A, personal, 790
BRUTALITIES in American psychiatric hospitals, [Wertham] 645—C
BUBONIC Plague: See Plague
BUCCAL Cavity: See Cheek
BUERGER'S Disease See Thromboangiitis obliterans
BUFFALO Mineral Water, 422—BI
BUILDING: See also American Medical Association, headquarters, Home, Hospitals, building, Housing
  skyscrapers, hygienic aspects, 1897, [Fishbein] ★468
BULBOURETHRAL Glands (Cowper's), analogy of Bartholin's glands, [Movitt] 734
BUNIONS See Toes, hallux valgus
BUNTING, C H, revised Principles of Ethics, [Fishbein] ★609; ★611
BURDENKO, NIKOLAI, death, 52; 714
BUREAU of A M. A: See American Medical Association
BURNING Pain: See Causalgia
BURNS, chemical, nitrogen mustard gas (1149), [Uhde] 889—ab
  chemical, of cornea, [McLaughlin] 719—ab
  complications, anemia, [Moore] 426—ab
  corneal and x-ray, sulfhydryl for, [Cruthirds] 131—ab
  erythrocyte changes in severe type, [Brown] 1315—ab
  pigmentation after boiling water splashed through a nylon stocking, 436
  treatment, chemical debridement used by Cooper, Hodge and Beard, 811
  treatment of shock with hypodermoclysis of isotonic salt solution, [Berman] 348—ab
BURSITIS of shoulder, roentgen treatment, [Young] 500—ab
  subacromial, [Olin] 1245—ab
BURTON-Hill Act See Hill-Burton Act
BUSH, VANNEVAR, stable relations between government and research, 250—OS
BUTTER fat, value for growth, [Basu] 68—ab
  food restriction vs doctors order in esophagus cancer, 341
  vitamin (new) in: vaccenic acid, 1299

BOOK NOTICES

Abderhalden, E, Lehrbuch der Physiologie in 33 Vorlesungen, 432
Abderhalden, R., Vitamine, Hormone, Fermente, 1173
Abdomen, Surgical Technic of Abdominal Operations, 576
Adolescence, Psychology of, 1040
Adventures of Jimmy Martin, Stowaway, 277
Albert-Weil, J, Les phénomènes d'allergie non spécifique dans la tuberculose et les fievres typhoïde, 72
Allen, E V., Peripheral Vascular Diseases, 575
Allen, R. B, Medical Education and the Changing Order, 1173
Book Notices—Continued
Allergy, 275
  in Practice, 433
  Les phenomenes d'allergie non specifique dans la tuberculose et les fievres typhoides, 72
  What You Don't Know May Hurt You! 144
American Dietetic Association, Handbook of Diet Therapy, 275
American Hospital, 1173
American Philosophical Society, Symposia, 897
Anatomy: See also Pathology; Physiology
  Human Ear in Anatomical Transparencies, 277
  Illustrations of Regional Anatomy, 143
  Principles of, for Physical Training Instructors in Royal Air Force, 1251
Anderes, E, Lehrbuch der Geburtshilfe und Gynakologie, 653
Anderson, W. A D., Synopsis of Pathology, 210
Andia, E. D, Liquido céfalo-raquídeo, L. C. R. 808
Anesthesia, Centennial of Surgical Anesthesia, 506
  Conduction: Clinical Studies of George P. Pitkin, 808
  Infiltrazione novocainica del plesso celiaco, 277
  Memoir to Academy of Sciences at Paris on New Use of Sulphuric Ether, 506
  Victory Over Pain: History of, 809
Ascorbic Acid Content of Blood, 897
Asthma, Diagnosis and Treatment, 505
  Treatment of, 433
Astrophysique, 506
Ataxia, Heredopathia atactica polyneuritiformis, 1319
Atlas of Genitourinary Pathology, 432
Bacteriology, Cultivation of Viruses and Rickettsiae, 1249
Bankoff, G., Operative Surgery, 1041
Basal Ganglia, Diseases of, 277
Behavior, Fundamental Patterns of Maladjustment, 355
Bell, E. T, Renal Diseases, 809
Benda, C. E, Mongolism and Cretinism, 575
Benedek, T., Insight and Personality Adjustment, 653
Berens, C, Diagnostic Examination of Eye. Step-by-Step Procedure, 276
Berg, R. H, Challenge of Polio: Crusade Against Infantile Paralysis, 211
Beveridge, W. I B., Cultivation of Viruses and Rickettsiae in Chick Embryo, 1249
Biochemistry, Currents in Biochemical Research, 356
  Laboratory Instructions in, 654
  Textbook of, (Mitchell) 653; (Harrow) 1040
Biography: See Physicians
Blood, Astrophysique, 506
  Ascorbic Acid Content, 897
  Principles of Hematology, 506
Blood Pressure, Introduction to Essential Hypertension, 209
  Renal Hypertension, 72
Blood Vessels, Peripheral Vascular Diseases, 575
Body Mechanics in Nursing Arts, 144
Bogert, L J., Fundamentals of Chemistry, 897
  Laboratory Manual of Chemistry, 897
  Suggestions for Courses in General Chemistry, 896
Bone Marrow, La cultura in vitro del midollo osseo, 809
  puncture, Principles of Hematology, 506
Bones, [Osteopetrosis and Normal Osteo- and Hematopoiesis], 576
Bonney, V., Technical Minutiae of Extended Myomectomy and Ovarian Cystectomy, 356
Boston City Hospital, Handbook of Neurological Examination and Case Recording, 576
Brain, Normal Encephalogram, 276
Braun-Menendez, E., Renal Hypertension, 72
Breakfast, Report of Better Breakfast Project Week, 277
British Information Services, Some Properties and Applications of DDT, 144
Brown, E L, Use of Research by Professional Associations, 1251
Campbell, H, Maternity Homes for Unmarried Mothers, 355
Cancer, Autour du probleme du cancer, 277
  Experimentelle Grundlagen zu einer modernen Pathologie, 1251
  of Scrotum in Relation to Occupation, 72
  Royal Cancer Hospital Mechanically Sorted Punched Card Index System, 897
  X-Ray Treatment of Accessible Cancer, 1249
Carbohydrate Metabolism, 575
Cardiology: See Heart
Cardiovascular Disease in General Practice, 357
Cardiovascular System: See Blood Vessels; Heart
Carr, M. W, Dentistry: Agency of Health Service, 506
Case Recording, Handbook of Neurological Examination and, 576
Casts, Plaster of Paris Technique, 969
Celiac Plexus, Infiltrazione novocainica del plesso celiaco, 277
Cells, Experimentelle Grundlagen zu einer modernen Pathologie, 1251

Book Notices—Continued
Cerebrospinal Fluid, Líquido céfalo-raquídeo L C R., 808
Chemistry: See also Biochemistry; Drugs; Pharmacology
  Fundamentals of, 897
  Laboratory Manual of, 897
  Suggestions for Courses in, 896
Chemotherapy, Modern Development of, 209
Chest: Handbook of Roentgen Diagnosis, 432
Children: See also Pediatrics
  Child from Five to Ten, 505
  Fundamental Patterns of Maladjustment, 355
  Monocular Vision Training, 808
  Personality of Preschool Child: Child's Search for His Self, 969
Cincinnati, Report of Better Breakfast Project Week, 277
Clark, R. C, Threescore Years and Ten: Eli Lilly and Co, 1876-1946, 277
Clinical: See Diagnosis
Commonwealth Fund, Psychotherapy in General Medicine, 654
Corwin, E H L, American Hospital, 1173
Cretinism and Mongolism, 575
Cushing, Harvey. Biography, 143
Cushny, A. B, Pharmacology and Therapeutics, 1250
Cutting, W. C., Actions and Uses of Drugs, 275
Cyclopedia: See Atlas, Dictionary; Encyclopedia
DDT, Some Properties and Applications of, 144
Davidoff, L M, Normal Encephalogram, 276
Davis, L, Principles of Neurological Surgery, 808
Deaf-mutism, Etiology of, with Special Reference to Heredity, 356
Denny-Brown, D, Diseases of Basal Ganglia and Subthalamic Nuclei, 277
  Handbook of Neurological Examination and Case Recording, 576
Dentistry: Agency of Health Service, 506
  Oral Diagnosis and Treatment, 1041
  Psychobiologic Foundations in, 732
Derbes, V. J, Treatment of Bronchial Asthma, 433
Dermatology, Practical Handbook of Pathology of Skin, 1319
  X-Rays and Radium in Treatment of Diseases of Skin, 144
Diabetes Mellitus, Diabetic Care in Pictures, 807
  Primer for Patients, 576
Diagnosis, Diagnostic Examination of Eye: Step-by-Step Procedure, 276
  Diagnostic Psychological Testing, 71
Dictionary See also Encyclopedia
  Spanish-English Medical, 808
  Stedman's Practical Medical, 275
Dierickx, K, [Osteopetrosis and Normal Osteo- and Hematopoiesis] 576
Diet. See also Food; Nutrition, Vitamins
  Handbook of Diet Therapy, 275
Doctor: See Physicians
Drugs: See also Chemistry; Pharmacology; Pharmacy
  Actions and Uses of, Textbook for Nurses, 275
  Formulary, University Hospital, Ann Arbor, Michigan, 1173
  Modern Drug Encyclopedia and Therapeutic Index, 210
  National Formulary, 896
  Threescore Years and Ten: First Seventy Years of Eli Lilly and Co 1876-1946, 277
Ducuing, J, Le fibro-myome uterin, 654
Ear: See Otology
East, T, Cardiovascular Disease in General Practice, 355
Economic Aspects of National Health Activities, 897
Education, Medical Education and the Changing Order, 1173
  Nature and Conditions of Learning, 969
Electrocardiography: See Heart
Embryology, Human, 731
Embryonal Tissues, Stimulation of Healing, 896
Encyclopedia: See also Atlas; Dictionary
  Modern Drug, 210
  of Psychology, 505
  Popular Medical, 211
Enzymes, Vitamine, Hormone, Fermente, 1173
Epilepsy, L'epilessia sperimentale, 654
Erwin, G S, Guide for Tuberculous Patient, 1040
Evans, M S, Monocular Vision Training, 808
Eyes: See Ophthalmology
Face, Etiology of Congenital Clefts of, 276
Family problems, Frank Discussions of, If You Ask My Advice, 72
Fash, B, Body Mechanics in Nursing Arts, 144
Favill, J, Outline of Spinal Nerves, 897
Feinberg, S. M, Allergy in Practice, 433
Fenichel, O, Psychoanalytic Theory of Neuroses, 71
Fibromyomas, Le fibro-myoma utérin, 654
Fiction, Adventures of Jimmy Martin, Stowaway, 277
  Doctor Destiny, 277
Fieschi, di A, La cultura in vitro del midollo osseo, 809
Fishbein, M, editor, Bibliography of Infantile Paralysis, 1789-1944, 355
  editor, Popular Medical Encyclopedia, 211
Fleisch, A., Ernahrungsprobleme in Mangelzeiten: Die schweizerische Kreigsernahrung 1939-1946, 1250
Fogh-Andersen, P., Inheritance of Harelip and Cleft Palate, 276
Food: See also Diet; Nutrition, Vitamins
  Report of Better Breakfast Project Week, 277
Formulary, National, 896
  University Hospital, Ann Arbor, Mich, 1173
Foundation See Menninger Foundation; National Foundation
Fractures, Plaster of Paris Technique in Treatment of, 969
Francke, D. E, Formulary, University Hospital, Ann Arbor, Mich., 1173
Friedenwald, H, Jewish Luminaries in Medical History, 807
Friedman, N. B, Atlas of Genitourinary Pathology, 432
Frogs, Xenopus Laevis: Bibliography, 277
Froin, G, Astrophysique, 506
Fulton, J. F., Centennial of Surgical Anesthesia, 506
  Harvey Cushing: A Biography, 143
Garrison, K. C, Psychology of Adolescence, 1040
Gay, L N, Diagnosis and Treatment of Bronchial Asthma, 505
Genetics: See Heredity
Genitourinary Pathology, Atlas of, 432
Geriatrics: See Old Age
Gesell, A, Child from Five to Ten, 505
Gilmour, W. S, Tuberculosis in West Indies, 356
Goldberga, D I., Stimulation of Healing of Wounds *and Ulcer Processes*, 896
Gonorrhea, Public Health Nursing in, 211
Grawitz, P B, Experimentelle Grundlagen zu einer modernen Pathologie, 1251
Green, D. E, editor, Currents in Biochemical Research, 356
Grollman, A, Pharmacology and Therapeutics, 1250
Gutman, A B., editor, Modern Drug Encyclopedia and Therapeutic Index, 210
Gynecology, Essentials of, 732
  Lehrbuch der Geburtshilfe und Gynäkologie, 653
  Operative, 807
  Practical Handbook of, 506
Haden, R L, Principles of Hematology, 506
Hagtvet, J., Ascorbic Acid Content of Blood, 897
Harelip, Inheritance of, 276
Harriman, P. L, editor, Encyclopedia of Psychology, 505
Harris, R S, editor, Vitamins and Hormones, 1251
Harrow, B., Textbook of Biochemistry, 1040
Haultain, W. F. T, Practical Handbook of Midwifery and Gynecology, 506
Havinga, E, Modern Development of Chemotherapy, 209
Health. See also Hygiene; Mental Hygiene
  Dentistry: Agency of Health Service, 506
  Public Health Nursing in Syphilis and Gonorrhea, 211
  Symposia on Present Day Social and Economic Aspects of National Health, 897
Heart: See also Cardiovascular Disease
  Electrocardiographic Interpretation, Exercises in, 654
  Estudio critico del tratamiento medico de la insuficiencia cardiaca, 211
Hektoen, L, Bibliography of Infantile Paralysis, 1789-1944, 355
Held, I W., Peptic Ulcer: Diagnosis and Treatment, 1249
Hematology: See Blood
Henry, S A, Cancer of Scrotum in Relation to Occupation, 72
Heredity, Etiology of Deaf-Mutism with Special Reference to, 256
  Heredopathia atactica polyneuritiformis, 1319
  Inheritance of Harelip and Cleft Palate, 276
Herndon, R F., Introduction to Essential Hypertension, 209
Hewitt, L. E., Fundamental Patterns of Maladjustment, 355
Hingson, R. A, editor, Conduction Anesthesia, 808
Histology, Experimentelle Grundlagen zu einer modernen Pathologie, 1251
Holmes, G., Introduction to Clinical Neurology, 277
Hormones and Vitamins: Advances in Research and Applications, 1251
  Vitamine, Hormone, Fermente, 1173
Horney, K, editor, Are You Considering Psychoanalysis, 732; (correction) 957
Hospital, American, 1173
  Boston City, Handbook of Neurological Examination and Case Recording, 576
  Mount Sinai, Manual of Nursing Procedures, 210
Hospital—Continued
  Organization and Management, 1173
  Royal Cancer, Mechanically Sorted Punched Card Index System, 897
  University, Ann Arbor, Michigan, Formulary, 1173
Hunterian Lecture, Cancer of Scrotum in Relation to Occupation, 72
Hygiene: See also Health
  Textbook for College Students, 1040
Hyman, H T, Integrated Practice of Medicine, 1039
Hypertension: See Blood Pressure
If You Ask My Advice, 72
Illegitimacy, Maternity Homes for Unmarried Mothers: Community Service, 355
Illustrations of Regional Anatomy, 143
Industry, Cancer of Scrotum in Relation to Occupations, 72
Infants: See Children, Pediatrics
Infra-Red Rays, Applications of, 896
Insight and Personality Adjustment, 653
Jamieson, E B, Illustrations of Regional Anatomy, 143
Janjigian, E R, Doctor Destiny, 277
Jenkins, R L, Fundamental Patterns of Maladjustment, 355
Jewish Luminaries in Medical History, 807
Katz, L N, Exercises in Electrocardiographic Interpretation, 654
Kidney, Artificial, 209
  Renal Diseases, 809
  Renal Hypertension, 72
  Zur Physio-Pathologie der Niere, 72
Kingsley, H L, Nature and Conditions of Learning, 969
Kitching, H, Sex Problems of Returned Veteran, 211
Kleiner, I S, Laboratory Instructions in Biochemistry, 654
Kolff, W J, Artificial Kidney, 209
Labor: See Obstetrics
Laboratory Instructions in Biochemistry, 654
Lecture: See Hunterian Lecture
Leprosy, 731
Leriche, R, Thromboses artérielles, 144
Lillingston, C, translator, Heredopathia atactica polyneuritiformis, 1319
Lilly, Eli, and Co, Threescore Years and Ten, 277
Lindenov, H., Etiology of Deaf-Mutism with Special Reference to Heredity, 356
Luckiesh, M, Applications of Germicidal, Erythemal and Infrared Energy, 896
McCartney, J L, Drama of Sex, 276
MacEachern, M T, Hospital Organization and Management, 1173
McElligott, M, Spanish-English Medical Dictionary, 808
MacKee, G M., X-Rays and Radium in Treatment of Diseases of the Skin, 144
MacLeod, J. M H, Practical Handbook of *Pathology* of Skin, 1319
Malariology, Practical, 1041
Marriage, Sex, and Family, 210
Maternity Homes for Unmarried Mothers: Community Service, 355
Medical Education: See Education
Medical History, Centennial of Surgical Anesthesia, 506
  Jewish Luminaries in, 807
  Memoir to Academy of Sciences at Paris on New Use of Sulphuric Ether, 506
  Victory Over Pain History of Anesthesia, 809
Medical Research: Symposium, 809
Medical Research Council, Cultivation of Viruses and Rickettsiae, 1249
Medical Social Service in Tuberculosis Control, 896
Medicine. See also Medical History; Physicians; Surgeons; Surgery; etc
  Integrated Practice of, 1039
  Popular Medical Encyclopedia, 211
Menninger Foundation, Diagnostic Psychological Testing, 71
Mental Hygiene, Hygiene: Textbook for College Students, 1040
  Symposium on National Health, 897
  Toward Mental Health, 211
Merritt, H H, Neurosyphilis, 1319
Meredith, F. L, Hygiene: Textbook for College Students, 1040
Michigan Child Guidance Institute, Fundamental Patterns of Maladjustment, 355
Midwifery: See Obstetrics
Military: See War
Miller, S. C., Oral Diagnosis and Treatment, 1041
Mitchell, P. H, Textbook of Biochemistry, 653
Mitchell-Nelson Textbook of Pediatrics, 276
Mola, B, Estudio critico del tratamiento medico de la insuficiencia cardiaca, 211
Mondor, H, Pasteur, 1041
Mongolism and Cretinism, 575
Montpellier, J M., Autour du probleme du cancer, 277
Morlock, M, Maternity Homes for Unmarried Mothers, 355
Morris E H, Public Health Nursing in Syphilis and Gonorrhea, 211

Book Notices—Continued
Morton, W. T. G., Memoir to Academy of Sciences at Paris on New Use of Sulphuric Ether, 506
Moruzzi, G., L'epilessia sperimentale, 654
Mount Sinai Hospital Manual of Nursing Procedures, 210
Mouth, Oral Diagnosis and Treatment, 1041
Muir, E., Leprosy, 731
Myomectomy, Extended, Technical Minutiae of, 356
National Formulary, 896
National Foundation for Infantile Paralysis, Bibliography, 1789-1944, 355
  Challenge of Polio: Crusade Against Infantile Paralysis, 211
Nelson, W. E., editor, Textbook of Pediatrics (Mitchell-Nelson), 276
Nephritis, Die interstitielle Nephritis, 211
Nerves: See *Neurology*
Neurology, Clinical Introduction to, 277
  Clinical, Textbook of, 432
  Die periphere innervation, 732
  Diseases of Basal Ganglia and Subthalamic Nuclei, 277
  Handbook of Neurological Examination and Case Recording, 576
  Heredopathia atactica polyneuritiformis, 1319
  Liquido ,céfalo-raquídeo, L.C.R.,808
  Normal Encephalogram, 276
  Outline of Spinal Nerves, 897
Neurosis, Psychoanalytic Theory of, 71
Neurosurgery, Principles of Neurological Surgery, 808
Neurosyphilis, 1319
New York Academy, American Hospital, 1173
  Medical Education and the Changing Order, 1173
Nielsen, J. M., Textbook of Clinical Neurology, 432
Nightingale, F., Notes on Nursing: What it is, and What it is *not*, (*facsimile of first edition*, 1859-1860), 276
Novels: See Fiction
Nursing, Actions and Uses of Drugs, 275
  Body Mechanics in Nursing Arts, 144
  Manual of Nursing Procedures, Mount Sinai Hospital, New York City, 210
  Notes on Nursing: What it is, and What it is not (Nightingale's), 276
  Public Health Nursing in Syphilis and Gonorrhea, 211
Nutrition: See also Diet; Food; Vitamins
  Experiences of Switzerland, 1939-1946, Ernahrungsprobleme in Mangelzeiten, 1250
Obstetrics, Essentials of, 732
  Practical Handbook of, 506
Occupations: See Industry
Ohio, Report of Better Breakfast Project Week of Jan. 14, 1946, 277
Old Age, Care of the Aged, 143
  Second Forty Years, 808
Ophthalmology, Diagnostic Examination of the Eye: Step-by-Step Procedure, 276
  Les yeux et la vision des vertebres, 433
  Monocular Vision Training, 808
  Ocular Prosthesis, 807
Oral Diagnosis and Treatment, 1041
Orgel, S. Z., Psychiatry Today and Tomorrow, 432
Orthopedics, Plaster of Paris Technique, 969
Osteopetrosis and Normal Osteo- and Hematopoiesis, 576
Otology, Human Ear in Anatomical Transparencies, 277
Ovary, Technical Minutiae of Ovarian Cystectomy, 356
Pain, Victory Over Pain: History of Anesthesia, 809
Palate, cleft, Inheritance of, 276
Pasteur, Louis, 1041
Pathology, Experimentelle Grundlagen zu einer modernen Pathologie, 1251
  Genitourinary, Atlas of, 432
  Practical Handbook of Pathology of Skin, 1319
  Synopsis of, 210
Patten, B. M., Human Embryology, 731
Pediatrics: See also Children
  Textbook of (Mitchell-Nelson), 276
Peptic Ulcer: Diagnosis and Treatment, 1249
Personality Adjustment, Insight and, 653
  of Preschool Child, 969
Pharmacology: See also Chemistry; Drugs; Pharmacy
  Cushny's Pharmacology and Therapeutics, 1250
Pharmacy's Part in Society, 1319
Physical Training Instructors in Royal Air Force, Anatomy and Physiology for, 1251
Physicians: See also Medicine; Surgery
  biography: Harvey Cushing, 143
  biography, Pasteur, *1041*
  Doctor Destiny, 277
  Jewish Luminaries in Medical History, 807
Physiology: See also Anatomy
  Lehrbuch der Physiologie in 33 Vorlesungen, 432
  Principles of, for Physical Training Instructors in Royal Air Force, 1251
  Zur Physio-Pathologie der Niere, 72
Pitkin, George P., Conduction Anesthesia, 808
Pleasants, H., Jr., If You Ask My Advice, 72
Poliomyelitis, Bibliography of Infantile Paralysis, 1789-1944, 355
  Challenge of Polio: Crusade Against Infantile Paralysis, 211
Polowe, D., Adventures of Jimmy Martin, Stowaway, 277
Polyak, S. L., Human Ear in Anatomical Transparencies, 277
Popular Medical Encyclopedia, 211
Pregnancy, Xenopus Laevis: Bibliography, 277
Prince, J. H., Ocular Prosthesis, 807
Procaine, Infiltrazione novocainica del plesso celiaco, 277
Professional Associations, Use of Research in Determining Program and Policy, 1251
Prosthesis, Ocular, 807
Psychiatry: See also Behavior; Mental Hygiene; Neurosis; Psychoanalysis; Psychology; Psychotherapy
  Today and Tomorrow, 432
Psychoanalysis, Are You Considering? 732; (correction), 957
  Theory of Neurosis, 71
Psychobiologic Foundations in Dentistry, 732
Psychology: See also Behavior; Psychoanalysis
  Diagnostic Psychological Testing, 71
  educational, Nature and Conditions of Learning, 969
  Encyclopedia of, 505
  Insight and Personality Adjustment: Study of Effects of War, 653
  of Adolescence, 1040
Psychotherapy in General Medicine: Report of an Experimental Postgraduate Course, 654
Public Health: See Health
Quigley, T. B., Plaster of Paris Technique, 969
Radiography: See Roentgenology
Radium in Treatment of Diseases of the Skin, 144
Rapaport, D., Diagnostic Psychological Testing, 71
Refsum, S., Heredopathia atactica polyneuritiformis, 1319
Rehabilitation and Convalescence, American Philosophical Society symposia, 897
  Proceedings Conference on, of Tuberculous, 576
Research, Medical Research: Symposium, 809
  Use of, by Professional Associations in Determining Program and Policy, 1251
Rice, T. B., Sex, Marriage and Family, 210
Rickettsiae, Cultivation of, in Chick Embryo, 1249
Rigler, L. G., Chest: Handbook of Roentgen Diagnosis, 432
Robinson, V., *Victory Over Pain: History of Anesthesia*, 809
Rochon-Duvigneaud, A., Les yeux et la vision des vertebres, 433
Roentgenology, Chest: Handbook of Roentgen Diagnosis, 432
  Handbook of Radiography, 72
  Principles in Roentgen Study of the Chest, 1251
  X-Ray Treatment of *Accessible* Cancer, 1249
  X-Rays in Treatment of Diseases of Skin, 144
Rogers, L., Leprosy, 731
Rosenthal, H., Diabetic Care in Pictures, 807
Ross, J. A., Handbook of Radiography, 72
Rossi, R., Infiltrazione novocainica del plesso celiaco, 277
Royal Air Force, Principles of Anatomy and Physiology for Physical Training Instructors in, 1251
Royal Cancer Hospital Mechanically Sorted Punched Card Index System, 897
Rudolph, J. A., What You Don't Know May Hurt You! 144
Russell, P. F., Practical Malariology, 1041
Ryan, E. J., Psychobiologic Foundation in Dentistry, 732
Sanitation: See Health; Hygiene
Sapeika, N., Xenopus Laevis: Bibliography, 277
Scoliosis: Practical Approach to Treatment, 1250
Scott, W. A., Essentials of Obstetrics and Gynecology, 732
Second Forty Years, 808
Sex, Drama of, 276
  Marriage and Family, 210
Skin: See Dermatology
Slaughter, F. G., New Science of Surgery, 276
Smith, A., editor, Medical Research: Symposium, 809
Smith, G., Psychotherapy in General Medicine, 654
Smithers, D. W., X-Ray Treatment of Accessible Cancer, 1249
Snow, W., Principles in Roentgen Study of Chest, 1251
Social Service (Medical) in Tuberculosis Control, 896
  Symposia on National Health, 897
Societies, Use of Research in Determining Policy *and Program, 1251*
Soskin, S., Carbohydrate Metabolism, 575
Southworth, J. L., editor, Conduction Anesthesia, 808
Spanish-English Medical Dictionary, 808
Spine, Scoliosis: Practical Approach to Treatment, 1250
Spivack, J. L., Surgical Technic of Abdominal Operations, 576
Spühler, O., Zur Physio-Pathologie der Niere, 72
Stedman's Practical Medical Dictionary, 275
Stieglitz, E. J., Second Forty Years, 808
Surgery, New Science of, 276
  Operative Gynecology, 807
  Operative Surgery, 1041
  Principles of Neurological Surgery, 808
  Surgical Technic of Abdominal Operations, 576
  Technical Minutiae of Extended Myomectomy and Ovarian Cystectomy, 356
Sweany, H. C., editor, *Guide for Tuberculous Patient*, 1040
Switzerland, nutritional experiences, 1939-1946, Ernahrungsprobleme in Mangelzeiten, 1250
Syphilis, Public Health Nursing in, 211
Taylor, N. B., editor, Stedman's Practical Medical Dictionary, 275
Teeth: See Dentistry
Te Linde, R. W., Operative Gynecology, 807
Therapeutics, Modern Drug Encyclopedia and Therapeutic Index, 210
  Pharmacology and, Cushny's, 1250
Thewlis, M. W., Care of the Aged (Geriatrics), 143
Thorax, Chest: Handbook of Roentgen Diagnosis, 432
  Principles of Roentgen Study of Chest, 1251
Thorman, G., Toward Mental Health, 211
Thromboses artérielles, 144
Treatment: See Therapeutics
Tuberculosis, Guide for Tuberculous Patient, 1040
  in West Indies, 356
  Les phenomenes d'allergie, 72
  Medical Social Service in Tuberculosis Control, 896
  Proceedings Conference on Rehabilitation of Tuberculous, 576
Tumors: See also Cancer
  Le fibro-myoma utérin, 654
Turner, D., Handbook of Diet Therapy, 275
Typhoid, Les phenomenes d'allergie, 72
Ulcer Processes, Stimulating of Healing of, 896
United Nations, Educational, Scientific and Cultural Organization, 897
University Hospital, Ann Arbor, Michigan, Formulary, 1173
  of Minnesota, Psychotherapy in General Medicine, 654
Urbach, E., Allergy, 275
Urdang, G., Pharmacy's Part in Society, 1319
Uterus, Le fibro-myoma, 654
  Technical Minutiae of Extended Myomectomy, 356
Venereal Disease: See also Gonorrhea; Syphilis
  Control of, 210
Veterans, Sex Problems of Returned Veteran, 211
Victory Over Pain: History of Anesthesia, 809
Villiger, E., Die periphere innervation, 732
Viruses, Cultivation of, in Chick Embryo, 1249
Vision: See Ophthalmology
Vitamins and Hormones: Advances in Research and Applications, 1251
  Vitamine, Homone, Fermente, 1173
Vonderlehr, R. A., Control of Venereal Disease, 210
War: See also Veterans
  Anatomy and Physiology for Physical Training Instructors in Royal Air Force, 1251
  Insight and Personality Adjustment: Study of Psychological Effects of War, 653
West Indies, Tuberculosis in, 356
What You Don't Know May Hurt You! 144
Wilder, R. M., Primer for Diabetic Patients, 576
Wolff, W., Personality of Preschool Child: *Child's Search for His Self, 969*
Woodcock, B., Scoliosis: Practical Approach to Treatment, 1250
Wounds, Stimulation of Healing of, 896
Xenopus Laevis: Bibliography, 277
Yale Clinic, Child from Five to Ten, 505
Zollinger, H. U., Die interstitielle Nephritis, 211
Zwarenstein, H., Xenopus Laevis: Bibliography, 277

C

CADAVERS: See Autopsies; Embalming
CADMIUM lined containers for foods and drinks, danger of, [Monnet] 729—ab
CAFFEINE: See also Coffee
  reproductivity of rats given, [Bachmann] 202—ab
CAIN, ROLLY M., death of president of Abbott Laboratories, 706
CAISSON DISEASE, decompression sickness, [Burkhardt & others] ★373
CALCIFICATION: *See Bones, growth; Lungs; Spleen*
CALCIUM, animal feeds should contain, 775—E
  ascorbate treatment of myasthenia gravis, 1252
  in Blood: See Blood
  in body fluids, reducing, 1043
  intake and hypertension, [Kesson] 574—ab
  levulinate, N.N.R., [Hartz] 543

CALCIUM—Continued
  metabolism disorder in renal osteodystrophy, [Norman & others] ★771
  metabolism, effect of oxalates on, 1010—E
  treatment of lupus vulgaris, [Hermans] 501—ab
CALCULI: See Bile Ducts; Gallbladder, Pancreas
CALIFORNIA cancer program, 412
  Medical Association, promote good public relations, [various authors] 628—ab
  Society of Internal Medicine organized, 636
  Spanish moss, antibiotic from, [Marshak] 1245—ab
  University of. See University
CALORIES, intake and industrial output, 322—E
  number required by farm animals compared with man, 775—E
CAL-PAR Dr Parrish's frauds, 57—BI
CAMBRIDGE University See University of Cambridge
CAMPS, Prison See World War II
  Trailer See Automobiles
CANADIAN Army See Army
CANCER See also under name of organ or region affected; Medicolegal Abstracts at end of letter M
  adenomas relation to, [Helwig] 1313—ab
  American Cancer Society (clinics inspection by American College of Surgeons), **132:** 1092, **133:** 38
  A M A committee 1913, [Fishbein] ★770
  British Empire Cancer Campaign report, 341, 566
  Clinics See also Cancer control
  clinics, (N Y) 562; (Kan) 792
  clinics (consultative) opened, Conn, 1227
  control, detection centers (10) to open at once, N Y C, 491
  control, detection clinic (free, New York), 256; (Ky) 706
  control, diagnostic clinic (Illinois), 115, 636
  control, federal funds for, A M A motion on dispersal 40
  control month, April, 1165
  control, prevention clinic, D C 185—OS
  control program, (Cal) 412, (Md) 955
  control programs, USPHS annual report 702
  control, survey of patients D C, 871—OS; 948—OS
  control, survey to be conducted, U S P H S, 482—OS
  control under Taft-Smith-Ball-Donnell Bill, 869—OS
  cytotoxic factor in blood of patients, [Roskin] 1038—ab
  day (annual) Mich, 562
  Diagnosis See also Cancer control
  diagnosis, vaginal smear, [Meigs] ★75
  eosinophilia in, [Isaacson] 1171—ab
  etiology, 20 methylcholanthrene, what dose to produce skin cancer in mice? 435
  hospital construction begins N Y, 414
  hospital, proposed in Chicago by Veterans Administration, 253
  Hoxsey—charlatan, 774—E (correction) 957
  information centers, W Va, 492
  metastases of cells through respiratory passages, [Furth] 268—ab
  metastases to bone from prostate, [Bersack] 131—ab
  mortality, decrease in women, 1025
  National Advisory Cancer Council, (Gastric Cancer Committee conference), 187, (membership) 790
  National Cancer Institute, Canada 1231
  National Cancer Institute, U S, 631—OS
  patients, home care for, N Y, 335
  Prevention See Cancer control
  prize essay contest by West Virginia Cancer Society, 415
  Public Health Cancer Association of America, 192
  recurrence in cervix 18 years after radium therapy, [Covington] ★935
  refresher courses, Calif, 49
  registry, establish Kans, 1292
  registry of chorionepithelioma, gift from Dr. Albert W Holman, 192
  research, (Ind) 115, (funds allotted W Va) 116 (bills in Congress concerning) 328—OS, (in England) 341, 566, (grant to U of California) 636, (at Washington U) 876
  research grants from Childs Memorial Fund, 1231
  symposium, (Ill) 255, (Wis) 956
  teaching day, N Y, 256
  treatment autovaccination (Besredka-Krasheninnikov), 111—E, [Gross] 800—C
  treatment, betatrons, proposed erection of, 556—OS
  treatment, Chaoul's near distance roentgen therapy, [Arho] 142—ab
  treatment, facilities for care of advanced patients, 955
  treatment, from Russia, 2 methods, 111—E
  treatment, KR, cancerolytic agent of Trypanosoma crusi, 111—E, 122, [Gross] 800—C, [Klyueva] 1038—ab
  treatment, male hormone, 734
  treatment, mechanism of radiation, Barnard Hospital lecture, [Warren] ★462
CANCER—Continued
  treatment, radiation, [Kaplan] 1245—ab
  treatment, tests of new chemical compounds at National Cancer Institute, 631—OS
  week, N. J, 876
CANICOLA Fever. See Leptospirosis canicola
CAPILLARIES See also Telangiectasia
  resistance and vitamin P, [Galmiche] 141—ab
CAPP'S Prize: See Prizes
CARBAMIDE See Urea
CARBARSONE treatment of amebiasis, 1042
CAR-BO-AK, 883—BI
CARBOHYDRATES: See also Dextrose, Lactose, Sugar
  diet high in, and thiamine deficiency, [Ring] 1304—ab
  diet high in, effect on bends, chokes, etc [Burkhardt & others] ★374; ★376
  diet rich in migraine produced by, (reply) [Foldes] 280
CARBON See also Charcoal
  activated, to remove odor from books, [Munkelt] 344—C
CARBON DIOXIDE inhalation for hiccup 810
  tension (alveolar) and decompression sickness [Hodes] 719—ab
CARBON MONOXIDE, blood concentrations in airplane pilots, [Pitts] 1304—ab
  poisoning (acute), Paris district, 55
  poisoning, nervous system lesions in, [Lhermitte] 806—ab
  uptake in high altitude flight, relation to lung ventilation, [Behnke] ★454
CARBON TETRACHLORIDE, liver injury from, methionine for (Council report), 107
  treatment of fasciolopsis infection, 900
4'CARBOXYPHENYLMETHANESULFONAMIDE See Caronamide
CARBUNCLE See also Furunculosis
  treatment, bacitracin, [Meleney & Johnson] ★677
CARCINOGENS. See Cancer etiology
CARCINOMA See Cancer
CARDANO, GIROLAMO, autobiography, 749—ab
CARDIAC: See Heart
  Muscle See Myocardium
  Neurosis See Asthenia, neurocirculatory
CARDIALGIA See Heartburn
CARDIOVASCULAR DISEASE See Blood Vessels disease, Heart disease
  Hypertensive: See Blood Pressure, high
CARDIOVASCULAR SYSTEM: See also Arteries; Blood Vessels; Capillaries, Heart Veins
  abnormal communications, diagnosis by catheterization, [Geiger] 135—ab
  congenital defects, surgical treatment, 248—E
  sounds, phonograph recordings, [Stokes] 429—ab
CARDS See Bridge
CARIES See Teeth
CARONAMIDE, new drug inhibits excretion of penicillin, 1294
CAROTID SINUS syndrome (correction) 192
CARPUS See Wrist
CARRIERS See Disease carriers (cross reference)
CARROTS, diet of, plus St John's Bread for diarrhea, [Rohmer] 729—ab
CARS. See Automobiles
CARSTENS, J H, answers New York Medical Record attacks on A M. A. in 1906 [Fishbein] ★685, ★686
CARTILAGE, grafts (composite free), [Brown] 720—ab
CARTOON See American Medical Association, Council on Pharmacy and Chemistry
CASE Finding See Tuberculosis
  Records See Medical Record Librarian
CASEIN, Hydrolysate of. See Amigen
CAST, local use of ice after, [Schaubel] 269—ab
CASTANEDA, GONZALO, death, 492
CASTANEDA Vaccine See Brucellosis
CASUALTIES: See Accidents; World War II casualties
CATARACT surgery in patient with head tremor, 278
CATGUT, chronic, vs cotton sutures, [Stevens] 891—ab
CATHARTICS, Corley's nostrums, 422—BI
  Helping Hand Laxative Tonic, 883—BI
CATHETER plus vaginal diaphragm to control urinary incontinence, [Castallo] ★244
  tracheobronchial drainage, [Foregger] ★1200
CATHETERIZATION, cardiovascular, [Geiger] 135—ab
CATTLE See also Cows
  fluorosis in, as industrial hazards, [Murray] 728—ab
  Q fever in U S, [Topping & others] ★813, [Irons & Hooper] ★815; [Irons & others] ★819, [Cox & others] ★820
CAUDA equina, tumors, lipoma, [Furtado] 208—ab
CAUDAL Anesthesia: See Anesthesia
CAUSALGIA, treatment, [Zikeyev] 431—ab
  treatment, inject tetraethylammonium ion, [Berry] 66—ab
  treatment, surgical, [Ulmer] 650—ab
CAVAL Veins See Vena cava
CAVITIES, Dental See Teeth caries
CECUM, amebic disease, [Wilbur] 1171—ab
CELLOPHANE wrapping of patent ductus arteriosus, [Poppe] 204—ab
CELLS: See also Blood cells Tissues
  argentaffin, in pancreatic islet cell tumors, [Hultquist] 730—ab
  Chromaffin: See Pheochromocytoma
  recovery after penicillin treatment in endocarditis, [Moore] 724—ab
CENTRAL Health Council for National Health Service, England, 880
CEPHALIN-cholesterol liver function test, [Mateer & others] ★911, (in liver cirrhosis), [Labby & others] ★1185
CERCARIA antigens for intradermal testing in schistosomiasis, [Alves] 69—ab
CEREAL PRODUCTS, Gerber's Ready to Serve Barley Cereal, 937
CEREBELLUM, chiropractic injuries, [Pratt-Thomas & Berger] ★600
  subdural hydroma, [Grant] 889—ab
  vascular lesions, [Skogland] 201—ab
CEREBRAL Palsy: See Paralysis, cerebral
CEREBROSIDES, staining kerasin in Gaucher's disease, 496
CEREBROSPINAL FLUID, changes from penicillin treatment of syphilis, [Sternberg & Leifer] ★3, [Rose & Solomon] ★7 [Platou & others] ★10
  false positive serologic reactions for syphilis, 578
  interaction, and Rh agglutinins, [Jakobowicz] 805—ab
  protein in subclinical poliomyelitis, [Andelman] 65—ab
CEREBROSPINAL SYPHILIS. See Neurosyphilis
CEREBRUM: See Brain
CERTIFICATION of Specialists: See Specialties
CERVIX uteri: See Uterus
CESAREAN SECTION, anesthesia in, 881
  early rising and morbidity in, [Headings] 129—ab
  repair of ventral hernia and, 507
CEVITAMIC Acid See Acid, ascorbic
CHADWICK Lecture See Lectures
CHAIN, E B, Nobel Prize winner in Italy, 1030
CHANCRE, time of positive serologic test, 1174
CHANCROID of uterine cervix, [Guerriero & others] ★834
CHARCOAL, value of gastric lavage in treatment of acute poisoning, 545—E
CHEEK, recurrent buccal vesicles from denture, 656
CHEMICAL Burns. See Burns
CHEMISTRY See Biochemistry
CHEMOTHERAPY. See also Sulfonamide Compounds
  background, symposium in *British Medical Bulletin*, 478—E
  of wounds, [Lyons] ★215
CHEST: See Thorax
CHICAGO, Institute of Medicine of, Dr. Irons' presidential address, 111—E
  Institute for Psychoanalysis, research at, 1023
  Public Health Institute closes its doors, 334
CHICKENPOX convalescents, globulins from, to treat herpes zoster, 55
  complicating pregnancy, defects in child, [Swan] 1316—ab
  diagnosis, simulating rickettsial pox, [Greenberg & others] ★901
CHIEVITZ, OLE, death, 421
CHILDBIRTH See Labor
CHILDREN See also Families, Infants, Maternity, Pediatrics, under names of specific diseases
  Adolescent See Adolescence
  Child Health Day May 1st, 1219—OS
  clinics for in trailer camps, Calif., 706
  development center, N Y C, 637
  diagnostic services for, extend, N Y C, 1293
  health service, American Academy of Pediatrics study, (Reference Committee report) 40
  Hospitals for: See Hospitals, children's
  nurseries (day) for report on, Sweden, 1300
  psychiatric clinics for, 878
  school, hospital classroom for, 1291
  school, pediculus capitis in, DDT for, [Kaiser] 130—ab, [Cowan] 1305—ab
  school, physical examination, 1292
  school, ringworm of scalp, present epidemic, [Steves & Lynch] ★306
  spacing between, prolonged interval between pregnancies, 578
  young, allow to set own pace, [Aldrich] 1314—ab
CHILDS Foundation See Foundations
CHINA, American Bureau for Medical Aid to China, 709
  CHINESE GOLDEN MIRROR OF MEDICINE, in Army Medical Library, 1018
  Peiping Union Medical College, Rockefeller Foundation terminates grants to, 564
CHINA (dishes). See Cooking and Eating Utensils
CHINIOFON enerels, N N R, (Premo) 543
  treatment of amebiasis, 1042
CHIROPRACTORS See also Medicolegal Abstracts at end of letter M
  cerebellar and spinal injuries after manipulation by, [Pratt-Thomas & Berger] ★600
  held in fraud, Calif, 875

CHLORIDES: See Choline· Gold, Methyl chloride, Platinum, Sodium chloride, Zephiran chloride
CHLOROBUTANOL bismuth subsalicylate in oil with N N R (Abbott) 937
*di*CHLORO-DIPHENYL-TRICHLOROETHANE See DDT
β CHLOROETHYL AMINES See Nitrogen Mustard
*di*CHLOROETHYL SULFIDE, exposure to mustard gas 517—ab
  possible late mustard gas keratitis, 145
CHLOROFORM, liver injury from, methionine for, (Council report), 107
CHLOROMA, etiology, nature of green pigment, [Humble] 729—ab
CHLOROPHYLL treatment of wound healing and suppurative disease, [Bowers] 1240—ab
CHOKES, at high altitude, [Burkhardt & others] *373
CHOLAGOGUES See Bile secretion
CHOLECYSTECTOMY. See Gallbladder excision
CHOLECYSTITIS See Gallbladder inflammation
CHOLECYSTOGRAPHY See Gallbladder roentgen study
CHOLEDOCHOLITHIASIS See Bile Ducts calculi
CHOLELITHIASIS See Gallbladder calculi
CHOLERA, Asiatic, streptomycin for, [Reimann] 131—ab
  in India 258
CHOLESTEATOMA See Epidermoid
CHOLESTEROL-Cephalin Test See Cephalin
  content of human aorta, [Faber] 652—ab
  deposition and atheromatosis [Faber] 70—ab
  in Blood. See Blood
CHOLINE See also Acetylcholine, Mecholyl bromide
  chloride, desirable effect on liver in protein deficiency, [Mateer & others] *915
  treatment of hepatomegaly and portal obstruction in diabetic child, 279
CHORIOEPITHELIOMA See Chorionic Carcinoma
CHORIOGONIN N N R, (Lakeside) 1281
CHORIOMENINGITIS, benign lymphocytic meningitis and glandular fever, [Tidy] 728—ab
CHORIONIC CARCINOMA, gift to establish registry from Dr A W Holman, 192
CHORIONIC GONADOTROPINS See Gonadotropins
CHOROIDITIS, toxoplasmic neutralizing antibody test for, [Johnson] 647—ab
CHROMAFFIN Cell Tumor See Pheochromocytoma
CHROMATES dermatoses in aircraft workers from [Ellis] 1244—ab
CHRYSOTHERAPY See Gold
CHYLOTHORAX, traumatic, from battle injury, [Berry] *319
CICATRIX obliteration of esophagus, esophagectomy for, [Sweet] 205—ab
  treatment of tender scars, 1174
CIGARETS See Tobacco
CILIARY BODY spasm as psychosomatic disorder, [Harrington] *670
CINCHOPHEN, acute yellow atrophy of liver, 1156—E
CINEMA See Moving Pictures
CIRCULATION See Blood circulation
CIRCULATORY SYSTEM See Cardiovascular System
CIRCUMCISION of newborn (reply) [Rosenthal] 436
  venereal disease incidence in Canadian army affected by [Wilson] 1243—ab
CIRRHOSIS See Liver
CITATIONS, Military: See World War II, Heroes
CITRA Nesia, 883—BI
CITRIN See Vitamins P
CITRUS Fruit See Fruit, Lemon juice
CLAMS, Alaskan, survey, 708
CLASS' Vitamin, Mineral and Herb Formula, 568—BI
CLAVICLE, resection, [Shumacker] 1314—ab
  unduly prominent, in adult renal osteodystrophy, [Norman & others] *771
CLEANSING See Detergents, Soap
CLEVELAND Health Museum, 1024
CLIMACTERIC See Menopause
CLIMATE See *Tropics* Weather
CLINICAL *Laboratory Technicians* See Technologists, medical
  Pathology. See Pathology
  Research See Research
  Status See Physical Examination
CLINICS See also Amputation, Anaphylaxis and Allergy, Cancer, Epilepsy Industrial Diseases Industrial Health, Mental Hygiene, Poliomyelitis, Psychiatry
  for children in trailer camps, Calif, 706
  Group See Medicine, group practice
  medical (new), Washington, D C, 1015
CLOTHING, dress reform, gallstones and tight lacing, [Fishbein] *315
  fiber glass, 900
CLOTTING See Blood coagulation
  Intravenous See Phlebothrombosis, Thrombophlebitis
CLOVER, Preparation from Spoiled Sweet Clover See Dicumarol
COAGULATION See Blood
COAL Miners See Miners
COCAINE alcoholic beverages doped with, 1253
COCCIDIOMYCOSIS, brain abscess, [Rhoden] 723—ab
  diagnosis, clinical and x-ray [Sweigert] 886—ab
  varieties [Smith] 720—ab
COCCYGODYNIA, proctalgias and perianal dyscrasias, [Granet] 127—ab
COFFEE See also Caffeine
  not contraindicated in coronary disease and Buerger's disease, 73
COITUS See also Contraception, Impotence, Impregnation, Libido, Reproduction, Spermatozoa
  angulation of penis due to short frenum, 812
COLD See also Ice
  Anesthesia See Anesthesia refrigeration
  hibernating *glands of* Merkle *primitive fat* organs 1283—E
  hibernation and pituitary hypertrophy, 656
  therapeutic use of, in leg injury, [Pernworth] 1308—ab
  therapeutic use *of (motion picture review)*, 802
  tissue reactions to, [Friedman] 200—ab
COLDS See also Cough, Hay Fever, Throat, Tonsils infected
  constitutional factor in 777—E
  diphtheritic coryza, [Robin] 429—ab
  treatment, difficult of finding cure 419
  treatment pyogen, spray promoted as "cure" (Joint Council report) 694
  treatment, steam inhalations 1174
COLE FRANK L, personal, 329
COLESTIN Natural Mineral Water, 568—BI
COLITIS, amebic, [Ellenberg] 424—ab, 881
  amebic disease of cecum, [Wilbur] 1171—ab
  amebic in American troops in India [Klatskin] 500—ab
  amebic, intestinal tumors of dysenteric origin, [Silverman & Leslie] *994
  toxic sulfonamide, [Gauss] 719—ab
  ulcerative (acute fulminating) with peri*tonitis, [Chisholm]* 134—ab
  ulcerative (chronic), appendicostomy in, [Yeomans] 272—ab
  ulcerative (chronic), proctologic interpretation and treatment, [Kleckner] *998
  ulcerative, late results, [Cave] 132—ab
  ulcerative, pleuropneumonia like organisms relation to, [Wallerstein] 137—ab
  ulcerative, succinylsulfathiazole for, [Collins] 1171—ab
  ulcerative, thiouracil for, [Martin] 1037—ab
COLLAPSE See Shock
  Pulmonary See Lungs, collapse, Pneumothorax
  Therapy See Tuberculosis of Lung, artificial pneumothorax
COLLEGE See also University
  Education See Education, Medical, premedical
  Medical See Schools, Medical
  of Medical Evangelists graduate school organized Calif, 115
  of Physicians, Surgeons, etc See American College, Royal College, list of Societies at end of letter S
  Students See Students
COLLINS, WILLIAM J, death, 492
COLON See also Cecum Colitis, Colostomy
  cancer, [Ochsner] 351—ab
  congenital megacolon (Hirschsprung's disease), 1043
  toxicity of mecholyl bromide, 655
  tumors, adenomas, relation to cancer, [Helwig] 1313—ab
  tumors, Italian societies discuss, 495
  volvulus of ascending portion, [Ericksen & Greenfield] *616
COLOSTOMY for intestinovesical fistula, [Barnes & Hill] *456
COLUMBIA Broadcasting System, "A Long Life and a Merry One," review, 1161
  University research at, 1024
COMBAT See World War II
COMMENDATION for War Service· See World War II Heroes
COMMISSION See also list of Societies and Other Organizations at end of letter S
  on Acute Respiratory Diseases exudative tonsillitis and pharyngitis, *588
COMMISSIONS. *See World War II, medical* officers
COMMITTEE See also National Committee, list of Societies and Other Organizations at end of letter S
  of A M A See American Medical Association
  on Health Council as agency to promote rural health, [Jones] 864—ab
  on Hospital Facilities and Health Centers for Rural Areas, report, [Stewart] 860—ab
  on Medical Care for Lower Income Groups, report, [Cooper] 865—ab
  on Medical Research, OSRD, accumulated records of, 1295
  on Methods of Bringing and Holding Physicians and Dentists in Rural Areas, [Mulholland] 861—ab
  on Nursing Needs of Rural Communities, report, [Sewell] 863—ab
COMMITTEE—Continued
  on Postwar Medical Service See American Medical Association Joint Committee for Coordination of Medical Activities
  on Voluntary Medical Prepayment Plans, report, [Doughty] 862—ab
COMMONWEALTH Fund See Foundations
COMMUNICABLE DISEASE See Infectious Disease
COMMUNITY, medical school responsibilities *to [Greene]* *1053
COMPENSATION See Income, Wages
  of Physicians See Fees
COMPLEMENT fixation tests for Q fever with paired serums [Irons & others] *819
CONCEPTION See *Impregnation, Pregnancy;* Sterility
  Control of See Contraception
CONCUSSION See Brain, Deafness
CONFERENCE· See National Conference
  Annual See American Medical Association, Annual Conference
  Regional, under auspices of A M A Council on Medical Service *American* Medical Association Council on Medical Service
CONGO RED test (doubtful) in amyloidosis, [Selikoff] 804—ab
CONGRESS See also Medical Days, International Congress National Congress, list of societies at end of letter S
  Annual Congress See American Medical Association
  French Congress of Medicine, Oct 1947, 1234
  National Turkish Medical Congress (9th), 1236
  of French Society of Otorhinolaryngology, 420
  of Psychoanalysts, Italy, 881
  of School and University Hygiene, 52, 118
  U S See United States
  U S, Medical Bills in (weekly summary): See Laws and *Legislation*
CONJUNCTIVITIS See also Keratoconjunctivitis
  diagnosis, clinical signs [Thygeson] *437
  diagnosis of blepharoconjunctivitis, 900
  Granular See Trachoma
  infectious acute, in newborn, A M A Committee introduced silver nitrate to prevent, 1908, [Fishbein] *689
  Parinaud's, possible, 357
  virus, human globulin for, 508
CONNECTICUT State Medical Society, news paper advertising, [various authors] 628—ab
CONNOR, LEARTUS prediction regarding A M A sections, biographical sketch, [Fishbein] *471, *685
CONSANGUINITY See Marriage
CONSTITUTION See American Medical Association, World Health Organization
CONSTITUTION (physique)· See also Psychosomatic Medicine
  aspects of obesity, [Freyhan] 1032—C; (reply) [Freed] 1032—C, [Johnson] 1238—C
  factor in common cold, 777—E
CONSULTANTS See also Army, U S, Medical Library
  medical division, new head, Col Dooling, 329
CONTACT *Dermatitis See Dermatitis venenata*
  Lenses See Glasses
CONTAGION See Infection
CONTAGIOUS DISEASE See Infectious Disease
CONTEST See *Prizes*
CONTRA Diaphragm, 773
CONTRACEPTION, Contra Diaphragm, 773
  Koromex Cream and Applicator, N N R, (Holland Rantos), 321
  Lasker award of Planned Parenthood Federation of America, 337
  Ramses Vaginal Jelly, Applicator, N N R, (Schmid) 1281
  right of physician to give advice by mail on, in 1922 [Fishbein] *927
  vaginal diaphragm and catheter to control urinary incontinence, [Castallo] *244
  vasectomy and ligation of oviducts 1254
CONTRACT See Medicolegal Abstracts at end of letter M
  Practice See Medicine, group practice
CONTRACTION See Cramps, Spasm
CONVALESCENCE See also Rehabilitation
  Care of Patients with Injury to Spinal Cord (motion picture review), 1033
  children, Herrick House for children, Ill, 636
  early puerperal rising, [King] 129—ab
  early rising and morbidity in cesarean section, [Headings] 129—ab
  hospitals for rest and *1066, *1072
CONVALESCENT SERUM See Chickenpox, Scarlet Fever
CONVULSIONS See also Eclampsia, Epilepsy
  seizures after barbiturate withdrawal, [Osgood] *104
  Therapeutic See Electric shock, Insulin shock
COOKING AND EATING UTENSILS· See also Restaurants
  bactericidal detergent for, [Guiteras] 803—ab

COOPERATION, Anglo French medical, West Africa 195
COOPERATIVE Medical Advertising Bureau, [Weld] 553—ab, [various authors] 629—ab, (birth of in 1912) [Fishbein] ★767—ab
COPPER salts for chronic rheumatism, [Forestier] 1317—ab
CORAMINE See Nikethamide
CORLEY'S nostrums 422—BI
CORNEA, blue halos in atabrine workers, [Mann] 1315—ab
  burns (chemical), [McLaughlin] 719—ab
  cloudy, goniotomy for congenital glaucoma, [Barkan] ★526
  eye bank, Stanford establishes 875
  Inflammation See Keratitis, Keratoconjunctivitis
  tattooing, use of platinum gold chloride, epinephrine (reply) [Knapp] 358
  ulcer, sulfhydryl for, [Cruthirds] 131—ab
CORONARY Arteries See Arteries
  Thrombosis See Thrombosis, coronary
CORONERS, Oakland County deputizes, Mich, 334
  system, 1891, [Fishbein] ★386
CORPSE See Autopsies, Embalming
CORPUS CALLOSUM, lipoma, [Amyot] 502—ab
CORPUS LUTEUM Hormone See Progesterone
CORSETS, tight lacing and gallstones, [Fishbein] ★315
COSMETICS See also Soap
  beauty culture role of medical profession, Denmark 123
  dermatitis in beauty parlor operator, 899
COST of clinical research, A M A Therapeutics Trials Committee report, ★30
COSTEN'S Syndrome and head pain, [Bell] 208—ab
COTTON, oxidized, hemostatic dressing in anorectal surgery, [Rosser] 893—ab
  suture material, [Derbyshire] 1313—ab
  sutures vs chromic catgut [Stevens] 891—ab
COUGH See also Colds, Hemoptysis, Whooping Cough
  syrup, [Boyd] 716—C
COUMARIN See Dicumarol
COUNCIL See under specific names as Medical Research Council, National Research Council
  A M A See American Medical Association
COUNTY Health Dept Units See Health
  Society See Societies Medical, list of societies at end of letter S
COURSES: See Education Medical
COURT Decision, Trial See Medical Jurisprudence
COUSINS first, marriage of, 1320
COWPER'S Glands See Bulbourethral Glands
COWPOX See Vaccinia
COWS See also Cattle
  best feeds for milk production, 775—E
  Milk See Milk
COX, WESLEY C, personal, 329
CRAIG, ALEXANDER R, A M A secretary, 1911, [Fishbein] ★765, (death, 1923) ★929
CRAMPS See also Spasm
  Menstrual See Dysmenorrhea
  muscular, and pain in extremities in parkinsonism, 280
CRANE Memorial Lecture See Lectures
  Prize See Prizes
CRANIUM See also Brain, Head
  injuries use of fluids in, 214
  intracranial pneumograms, [Schneider] 650—ab
  porencephaly, [Pendergrass] 130—ab
CRASH Injuries See Aviation
CREAM See Butter
  of Tartar See Potassium bitartrate
CRETINISM and marriage 898
  growth promoting agents 898
CRILE, GEORGE, JR Naval Medical School lecture 48
CRIMINALS See also Impostors
  first electrocution in 1891 [Fishbein] ★386
CRIPPLED See Handicapped, Physical Defects, Poliomyelitis
CRYMO Anesthesia See Anesthesia, refrigeration
CRYMOTHERAPY See Cold, therapeutic use
CUBA U S blocks shipment of drugs to, 788—OS
CULBERTSON J C editor and manager of Journal, 1891, [Fishbein] ★384, ★387
CULTS See also Chiropractors, Naturopathy; Osteopaths
  medical profession in relation to, [Fishbein] (1870-1874) ★100, (A M A condemns, 1875) ★195 (menace 1921) ★924 (Judicial Council decision in 1924) ★933
CULTURE Method See Bacteria, Leishmaniasis cutaneous
CURARE, in abdominal surgery, [Howard] 204—ab
  intocostrin in shock treatments for mental patients, [Cohen] 503—ab
  intocostrin to differentiate muscle spasm from organic changes, [Jones] 139—ab
  pentothal oxygen to relax muscles in abdominal surgery, [Davison] 1245—ab
CURARE—Continued
  substitute, bebeerine dimethylether methochloride, Brazil 882
  treatment of muscle spasm in acute low back pain, [Schlesinger] 499—ab
  treatment of spasms and rigidity, 882
CURLEY Bu-T-Caps Vitamins, Cal-Pans Vitamins, 264—BI
CURRICULUM See Education, Medical
CUSHING'S Syndrome, adrenal cortex tumor, [Spence] 1311—ab
CUTLER Lecture See Lectures
CYST See also Bartholin Glands, Breast, Mediastinum, Pancreas, Stomach
  Pilonidal See Pilonidal Sinus
  Sebaceous See Steatoma
CYSTITIS See Bladder
CYSTOSCOPY See Bladder
CYTRAL vitamin A fragment, 1235
CZECHOSLOVAKIA American medical mission to, 545—E

D

DDT, danger in hospital kitchens and dining rooms to control flies, 73
  death after exposure to, [Hill] 1036—ab
  plane to spray, Florida, 489
  transportation of mosquitoes in old tires filled with water, [Pratt] 725—ab
  treatment of pediculosis, 733
  treatment of pediculus capitis in school children, [Kaiser] 130—ab, [Cowan] 1305—ab
DFP treatment of myasthenia gravis, [Comroe] 886—ab, 1252
D H E 45 (dihydroergotamine) in migraine, [Pollock] 502—ab
DPS Formulae, DPS Formula 56, 264—BI
DA COSTA Syndrome See Asthenia, neurocirculatory
DAIRY PRODUCTS See Butter, Milk
DANDRUFF See Alopecia seborrheica
DANISH Medical Association, 123, (Domus Medica) 961
DART, RAYMOND O, new director of U S Army Institute of pathology, 252
DAVIS, NATHAN SMITH, first editor of the Journal, [Fishbein] ★239; (account of progress in 1885) ★310
  memorial to [Fishbein] ★683, ★763, ★765; ★841
  presidential address 1865, [Fishbein] ★24
DAVIS Lecture See Lectures
DAY Nurseries See Children
DAYLIGHT saving time advocated by A M A, [Fishbein] ★848
DEAD BODIES See Autopsies, Embalming
DEAF MUTISM, rubella in pregnancy cause of, 1012—E
DEAFNESS See also Hearing, impaired
  concussion, in 100 gunnery instructors, [Stewart] 63—ab
  congenital, in child; German measles in mother, [Hopkins] 268—ab, [Clayton-Jones] 1316—ab
  diagnosis, course in audiometry, Iowa, 1292
  Eighth Nerve See Otosclerosis
  evaluating percentage in medicolegal cases, standard procedure, (Council report) ★396
  mild perceptive, with tinnitus aurium, 436
  traumatic, ear plugs to prevent, 1174
  Treatment See Hearing aids
DEAN'S Committee See Schools, Medical
DEATH See also Coroners, Embalming, Murder, Suicide
  Accidental See Accidents, fatal
  Cause of See also Accidents fatal, under names of specific conditions and substances as Anesthesia
  cause of, Analbis Suppositories, 852—E, [Weinstein] 962—C
  cause of, posttransfusion death in infant, 811
  Examination After See Autopsies
  of Fetus See Fetus
  of Infants See Infants mortality
  of Physicians See Physicians, death, list of deaths at end of letter D
  Postmortem See also Autopsies
  postmortem direct electrocardiography of restored human heart, [Andreyev] 431—ab
  Rate See Vital Statistics
  sudden and unexpected, of young soldiers, 325—E, [Moritz] 721—ab
  sudden heart, pathologic anatomy, [Munck] 968—ab
  thymic 644
  time of, body temperature as guide in determining, 195
DECELERATOR, impact, [Bierman & others] ★522
DECIDUA See Endometrium
DECIDUOMA malignum See Chorionic Carcinoma
DECOMPRESSION SICKNESS See Altitude, high
DEERFLY Fever See Tularemia
DEFECTS, Physical See Abnormalities; Disability, Handicapped, Physical Defects
DEFENSE, National See World War
DEFICIENCY DISEASE See also Beriberi, Nutrition deficiency, Pellagra, Scurvy, Vitamins deficiency
DEFICIENCY DISEASE—Continued
  tongue changes in British troops, [Smith] 68—ab
  wound healing in, [Wolfer] 1313—ab
DEFINITION See Terminology
DEFORMITIES See Abnormalities; Poliomyelitis
DEGLUTITION See Plummer-Vinson Syndrome
DEGREE See Health, public, Technologists
DEHYDRATION, toxicity of mercurial diuretics, [Ben-Asher] 348—ab
  treatment, intravenous infusion [Borst] 968—ab
DEHYDROCHOLIC Acid See Acid
DE LAMAR Lecture See Lectures
DELIVERY See Labor
DELOUSING See Pediculosis, treatment
DEMENTIA PARALYTICA, treatment, penicillin or plus fever, [Rose & Solomon] ★6
DEMENTIA PRECOX, schizophrenia in children, [Schumacher] 649—ab
  schizophrenia (transitory) in bromide intoxication, [Levin] 130—ab
  treatment, insulin plus electroshock in schizophrenia, [Polatin] 726—ab
DEMEROL HYDROCHLORIDE See Meperidine
DEMOBILIZATION See World War II, medical officers
DENIT, GUY B, personal, 329
DENTAL See under Dentistry
  Caries See Teeth
  Practice Acts See Medicolegal Abstracts at end of letter M
DENTISTRY. See also Jaws, Teeth
  Committee on bringing and holding dentists in rural areas, [Mulholland] 861—ab
  dental benefits under British National Health Insurance Act [Josselyn] 123—C
  dental health services under Taft Smith-Ball-Donnell Bill 870—OS
  Eastman Institute provides free care to children, Stockholm, 712
  experiment in dental hygiene, Norway, 263
DENTISTS See Dentistry, Medicolegal Abstracts at end of letter M
DENTURE See Teeth, artificial
DEODORANT See Odor
DEPRESSION, Mental See Melancholia, Mental Depression
DEPROPANEX, effects of cholagogues on coronary occlusion, 146
DEPROTEINATED Extract of Pancreatic Tissue See Pancreas
DERMATITIS See also Eczema, Urticaria
  arsenical, BAL for, [Sulzberger & Baer] ★293
  Atopic See Neurodermatitis
  Contact See Dermatitis venenata
  cosmetic, in beauty parlor operator, 899
  exfoliativa, after gold therapy 507 733
  gold, BAL for [Ragan & Boots] ★752
  Industrial See Industrial Dermatoses
  lichenoid pigmentary, [Wilson] 200—ab
  Poison Ivy See Rhus
  quinacrine, [Drake] 134—ab, [Peterkin] 727—ab
  ragweed [Slater] 803—ab
  recurrent vesicular, of hands, [Flood] 892—ab
  rubber balloon cause of, 1174
  venenata, from Japanese rifles, [Hinman] 132—ab
  venenata from marine animal contact, [De Oreo] 720—ab
  venenata, from penicillin, [Friedlaender] 269—ab
DERMATOLOGY See also Skin, under names of specific skin diseases
  Hispano-Portuguese Congress (1st), 566
  5 nitro 2 furaldehyde semicarbazone, [Downing & others] ★299, [Morin] 963—C
DERMATOSIS See Industrial Dermatoses; Skin disease
DESENSITIZATION See Anaphylaxis and Allergy
DESOXYEPHEDRINE (methedrine) in psychiatric diagnosis, [Simon] 721—ab
DETERGENTS See also Soap, Zephiran chloride
  bactericidal, for cooking and eating utensils, [Guiteras] 803—ab
  toxicity if swallowed? 358
DETERIORATION, tropical, 1216—E
DEXTRI-MALTOSE, treatment of peptic ulcer, [Co Tui] 1312—ab
DEXTRO QUININE, 568—BI
DEXTROSE, glucose vs anoxia in flying personnel, 776—E
DIABETES INSIPIDUS with postpartum pituitary necrosis, [Spain] 727—ab
DIABETES MELLITUS, Cleveland Diabetes Society organized, 336
  committee, W Va, 415
  complications, arteriosclerotic leg, 1320
  complications, chronic peptic ulcer, [Wood] 1240—ab
  complications hepatomegaly and portal obstruction in child, 279
  complications, pregnancy, hyperplasia of Langerhans islets in fetuses, [Hultquist] 1318—ab
  diagnosis (differential) of glycosuria, 278

DIABETES MELLITUS—Continued
Diet in: See Diabetes Mellitus, treatment
etiology, excessive use of sugar or glucose cause? 734
etiology, prolonged treatment with thyroid, 195
etiology, pseudoglycosuria in patients treated with penicillin, [Boldyreff] 715—C
experimental, in rats, age in relation to, 196
experimental, induced by alloxan, 195, 496
insulin in, globin insulin with zinc, N N R, (Squibb) 543
insulin resistance (extreme), [McGavack] 891—ab
New *England Association (first meeting) 1025*
New Jersey Diabetes Association, 1293
New York Diabetes Association, (aids research) 117, (meeting) 876
pancreatic, hyperthyroidism effect on, 195
research, fellowship established, Pa, 50
treatment diets, simplified method for calculating [Caso & Stare] *169
DIABETES RENAL See Glycosuria
DIAGNOSIS See also under *names of specific* diseases
Case Finding See Tuberculosis
children's, *diagnostic* services, extend, N Y C, 1293
Clinic See Cancer, Industrial Diseases
problem: syncope, [Brian] 351—ab
significance of breast striae, 358
DIALYSIS, peritoneal, for anuria, [Reid] 503—ab
DIAMIDINES treatment of kala-azar, 420
DIAPHRAGM, abscess (subdiaphragmatic) [Adams] 650—ab
DIAPHRAGMS (vaginal), Contra Diaphragm, Council accepted, 773
plus catheter to control urinary incontinence, [Castallo] *244
DIARRHEA See also Dysentery
acute fulminating ulcerative colitis with peritonitis, [Chisholm] 134—ab
epidemic in infants, Mass, 489
epidemic in newborn, Mass, [Rubenstein] 1311—ab
epidemic in newborn nursery secondary to milk-borne epidemic [Ensign] 271—ab
prophylaxis in newborn, [Weymuller & others] *82
treatment, bismuth subnitrate causes methemoglobinemia in infant, [Wallace] *1280
Trichomonas hominis and, 145
DIASONE treatment of leprosy, [Muir] 967—ab
DIATHERMY, home (Council report), 541
Kirschner electrocoagulation of gasserian ganglion, 577
DIBENZYL-METHYL-AMINE: See *alpha*-Fagarine
DICHLORO-DIPHENYL-TRICHLOROETHANE See DDT
DICHLOROETHANE (ethylene dichloride) 577
DICHLOROMETHANE (methylene dichloride), toxicity, 145
DICOUMARIN Se Dicumarol
DICTION See Terminology
DICUMAROL, anticoagulants and coronary thrombosis, 970
treatment, contraindicated for priapism in leukemia, 73
treatment of acute coronary occlusion, 357
treatment of multiple sclerosis, [Putnam] 1306—ab
treatment of venous thrombosis and pulmonary embolism, [Allen & *others*] *1268
DIET See also Dietitians, Food; Nutrition
after cholecystectomy, 213
Calories in: See Calories
canine hysteria and, [Mellanby] 805—ab
Carbohydrates in: See Carbohydrates
cards available for physicians interested in infant and child feeding, W Va, 116
Deficient: See Nutrition
Diabetic. See Diabetes Mellitus, treatment
Fat in. See Fat
in liver impairment, [Mateer & others] *915; [Witts] 1315—ab
Infant's See Infants, feeding
Protein in See Protein
Reducing. See Obesity, treatment
Salt Free: See Salt
Therapeutic: See Diabetes Mellitus, Heart insufficiency, Jaundice, Liver cirrhosis
tuberculosis in captive wild birds relation to, [Ratcliffe] 888—ab
Vitamins in: See Vitamins
DIETHYL ETHER, treatment, [Wirtschafter & Widmann] *604
DIETHYLSTILBESTROL, effect on experimental diabetes mellitus, 195
N N R, (Harrower; Miller; Premo; Vale) 477
DIETITIANS needed for U. S. Army, 408
in all hospitals, *1077
DIGITALIS, new extracts, 643
poisoning retrobulbar neuritis and complete heart block, [Wagener] 200—ab
prophylactic digitalization, 508
treatment of acute coronary occlusion, 357
DIHYDROERGOTAMINE (D. H. E 45) in migraine, [Pollock] 502—ab
DI-ISOPROPYL-FLUOROPHOSPHATE in myasthenia gravis, [Comroe] 886—ab; 1252
DIMELS, 883—BI
2,3 DIMERCAPTOPROPANOL: See BAL
beta DIMETHYLAMINOETHYL Benzhydryl Ether Hydrochloride: See Benadryl
[illegible]ay Bill: See Wagner
review), 802
of amebiasis, 1012
in infants skin to,
in, [Ipsen] 1243—ab
1896, [Fishbein] *468
carriers, [Reber] 1317—ab
carriers, penicillin *treatment*, [Karelitz] 1310—ab
complications, late neuronitis, [Sampson] *129—ab*
complications, neurologic [Bronson] 500—ab
coryza, [Robin] 429—ab
gravis, electrocardiography in, [Giraud] 353—ab
in Boston, 1228
in recent years, [Mortenson] 504—ab
increase, (N C) [Stevick] 204—ab; (sharp, Mass) 637, (New York) 1164; (N J) *1293*
Malignant: See Diphtheria gravis
mortality, increase in 1946, Ill, 954
prevention in Sullivan County, Ind, 1228
skin, [Livingood] 892—ab
toxin, antidotal property of filtrates of Penicillin notatum, 33—E
treatment, penicillin, [Karelitz] 1310—ab
DIPLOMA Mills See Licensure
DIRECTORY. See American Board of Ophthalmology, American Medical Directory, American Medical Association, Directory Department
DIRT. See *Dust*
Removal of See Detergents
DISABILITY See also Handicapped, *Industrial Accidents* Physical Defects
exhibit showing conquest of disablement, 566
from accidents, National Safety Council report, 564
in Veterans See Veterans, disabled
Rehabilitation after See Rehabilitation
200,000 Americans are potentially unemployable each year through disablement, 788
War: See Rehabilitation, Veterans, disabled, World War II, casualties
DISCHARGE of Medical Officers See World War II, *medical officers*
DISEASE See *also* Autopsies, Death; Diagnosis, Health Pathology, Patients, under *names of specific diseases*
allergy in production of lesions in, 776—E
Carriers See Diphtheria, Streptococcus; Typhoid
Chronic See Disease, incurable, Disease, long term
Contagious See Infectious Disease
Convalescence from. See Convalescence
Deficiency See Deficiency
Diagnosis See Diagnosis
Disabling See Disability
Early Rising See Convalescence
lemiology
—E
Diseases
incurable, remedies sought through atomic energy 631—OS
Industrial See *Industrial Diseases*
long term illness in modern society, [Bluestone] *1051
Mental See Mental Disorders
new rickettsial pox, [Huebner] 272—ab; [Greenberg & others] *901
Nomenclature See Terminology
Occupational See Industrial Diseases
Physical Mental Relationship See Psychosomatic Medicine
Prevention: See Preventive Medicine
Rate See Vital Statistics
Sickness Insurance See Insurance, sickness
Spread of. See Epidemiology
Treatment of See Hospitals, Therapeutics
Tropical See *Tropical Disease*
DISHES See Cooking and Eating Utensils
DISINFECTION See Bactericides
of Air See Air disinfection
DISLOCATION See Jaws, Spine
DISTINGUISHED Service Medal See World War II, Heroes
DITHIOPROPANOL: See Bal
DIURESIS, mercurial, tetany after, [Marshall] *1007
mercurial, toxicity, [Ben-Asher] 348—ab
DIVERTICULOSIS: See Intestines
DIVORCE See Medicolegal Abstracts at end of letter M
DIZZINESS See Vertigo
DOCK (George) Lecture: See Lectures
DOCK workers, pneumonoconiosis in, [Dunner] 428—ab
DOCTORS See Physicians
"Doctors—Then and Now". See American Medical Association radio program
Trade names beginning with "Dr": See under surname concerned
DOCVETS, Physicians Veterans of World War II, 184—OS; 1159—OS
DODSON, JOHN M, editor-in-chief of *Hygeia*, 1923, [Fishbein] *931
DOGS: See also Rabies
atherosclerosis in, [Steiner] 133—ab
diet and canine hysteria, [Mellanby] 805—ab
DOGS—Continued
Seeing Eye Dog, hoax, 191
vaccination required, N. Y. C, 116
DOLANTIN: See Demerol
DONATIONS: See Fellowships; Foundations; Hospitals; Library; Prizes; Research grants; Scholarships
[illegible]: See Taft
ma inguinale
ead of medical consultants division, 329
DORYL treatment of myasthenia gravis, 1252
DOUCHE, vaginal, 508
DOYNE *Medal: See Prizes*
DRAINAGE: See Biliary Tract; Bladder
DRESS See Clothing
DRESSINGS. See also Adhesive; Cast; Medical Supplies
cellophane wrapping of patent ductus arteriosus, [Poppe] 204—ab
fixing nasal tube with gauze bandage, [Schroff] 345—C
gelatin sponge as hemostatic dressing in anorectal surgery, [Rosser] 893—ab
surgical, indictment charging restraint of trade in, 52
DRINKING: See Alcoholism; Water
Utensils: See Cooking and Eating Utensils
DRIVING: See Automobiles
DROPSY: See Ascites, Edema
DRUGGISTS. See Pharmacists
DRUGLESS Healers. See Cults
DRUGS See also Medical Supplies; Pharmacopeia; and under names of specific drugs
Addiction: See Meperidine, Morphine; Narcotics
advertising products to the public, Council discusses, 850
alcoholic beverage doped with, 1253
Anesthetic: See Anesthesia
antagonism of barbiturates and amphetamine sulfate, 280
antipyretic, effects on measles eruption, 508
commentators fear production of moving picture glamorizing use of, 46—OS
decompression sickness prevented with [Williams] 1308—ab
Eruptions: See Dermatitis, Eruptions
manufacturers should market in bulk form as accepted dosage form, Council discusses, 850
N. N R: See under names of specific drugs
National Formulary published, 52
Patent Medicines: See Nostrums
Prescriptions: See Prescriptions
Priorities and Allocations. See Priorities and Allocations
Proprietary See Proprietaries
shipment to Cuba, U S blocks, 788—OS
surplus, sale, 951, 1162
Technical Intelligence Division investigation, (Council discusses) 851
Therapeutic Use: See Chemotherapy; Self-Medication, Therapeutics, under names of specific diseases
Traffic: See Narcotics
U S *Food and Drug Administration*; Legislation: See Food
DRUNKENNESS See Alcoholism
DUCREY'S Bacillus. See Chancroid
DUCTLESS GLANDS See Endocrine Glands
DUCTUS ARTERIOSUS, patent, cellophane wrapping and ligation of, [Poppe] 204—ab
patent in 3 sisters, [Kjaergaard] 504—ab
patent, surgical treatment, [Bradshaw] 348—ab
DUCTUS BOTALLI. *See Ductus arteriosus*
DUKE University, effect of immunization on epidemic influenza, [Broadbent] 204—ab
DUNGLISON, R J, A. M. A. *treasurer*, 1894, [Fishbein] *391
DUODENAL TUBE, fixing nasal tube with gauze bandage ties, [Schroff] 345—C
DUODENUM, *cancer, (primary)* [Castex] 806—ab
roentgen study, ulcer perforates during, [Schilling] 273—ab
Ulcer See Peptic Ulcer
DUST, Disease from Inhaling See Pneumonoconiosis
from paper, effect of, 435
Removal. See Detergents
study of air pollution in Chicago, 334
DUSTING POWDER, tetanus from infected talc, fatal to 3 infants, Australia, 1031
for rubber gloves, 1218—E
DUTCH See Netherlands
DWARFISM, growth promoting agents, 898
Renal See Osteodystrophy
DYES: See Congo Red; Green; Methylthionine Chloride; Pigment
DYNAMITE *encephalosis*, [Gerle] 142—ab
DYSENTERY: See also Diarrhea
Amebic: See Colitis, amebic
intestinal tumors due to, [Silverman & Leslie] *994
DYSGERMINOMA *of ovary*, [Custer] 66—ab
DYSMENORRHEA, treatment, benadryl, [Tyson] 137—ab
treatment, surgical, [Duncan] 803—ab
DYSPNEA: See Asthma
DYSTONIA musculorum deformans, 278
DYSTROPHY: See *also Osteodystrophy; Osteoporosis, posttraumatic*
Muscular: See *also Myasthenia gravis*
muscular progressive, inheritance, 212

DEATHS

A

Abercrombie, Joseph Albert, 1232
Abrahamson, Philip, 640
Adams, Edward C Leverett, 338
Allen, Harry W., 1026
Allen, Irving Cyrus, 640
Allen, M H, 1026
Anderson, Arthur, 640
Anderson, John Jr., 1026
Anderson, John Steel, 958
Anderson, Reuben Bennett, Jr., 193
Anderson, Ross Epting, 1026
Andrew, John, 1166
Andrews, Harold Edwin, 1232
Archer, James Cox, 1296
Armstrong, Jeremiah Frank, 53
Arnold, Charlotte E. Cooke, 1026
Arnold, Enga Mitchell, 259
Arnson, Julius Ord, 119
Ashworth, John, 119
Austin, Howell Hobbs, 1166
Averill, Edna Blanche, 1232
Axelson, John M., 53

B

Baerens, Oscar Frank, 1026
Bailey, James William, 53
Bailiff, Jesse Oscar, 259
Baker, William Asa, 1026
Baker, William Thomas, 1232
Bales, Blenn Rife, 53
Ball, Thomas Joseph, 417
Ballard, Sylvester L, 1026
Bancroft, Henry Valentine, 1026
Barbash, Samuel, 259
Barber, Leon James, 493
Barclay, Alexander James, 193
Barefoot, Mordecai Lee, 338
[illegible], 417
[illegible], 1296
[illegible], 565
Barnett, Cecil Ernest, 1232
Barry, Albert Francis, 640
Barry, Chester Leroy, 1026
Bartley, Charles P, 338
Bass, Frank Earl, 795
Bauer, John A, 259
Beachler, George Frederick, 193
Beall, Khleber Heberden, 958
Beatty, George Evans, 493
Becton, Edwin P, 259
Beckel, Frederick, 119
Beery, George W, 640
Behrens, Charles Bernhardt, 193
Belden, Louis DeKeyser, 338
Belding, Clifton LeRoy, 259
Beling, Christopher Charles, 417
Benson, Arthur Wight, 53
Bentley, Frederick James, 1232
Berger, William John, 958
Bernfield, Martin Aaron, 1296
Berns, Peter C, 1296
Bertram, Bernard John, 259
Besser, Edward Francis, 565
Best, Marshall Merrill, 1296
Bisson, Walter Clinton, 259
Blair, Mott Parks, 417
Boenke, Rudolph, 193
Bogar, Joseph E, 1026
Bogomolets, Alexander A, 123
Boland-Wegmann, Sarah Jane, 640
Bonnell, Harry Granville, 119
Bonoff, Zelly Adam, 1296
Bookout, Alton Coleman, 711
Borders, Dennis J, 417
Bosselmann, Clarence Conrad, 338
Bourque, Norbert Odeon, 338
Bradburn, Hubert Benjamin, 194
Brand, Eli Thomas, 493
Brav, Max, 879
Breckenridge, Arnold, 796
Breuer, Charles Hugh, 640
Brewster, Roger Bernard, 795
Bridge, M L, 259
Brigham, Frank T, 493
Briskman, Alfred Lee, 417
Bronson, Albert F, 339
Brooks, Charles Newton, 417
Brown, Andrew Jackson, 1296
Brown, Henry Harold, 1026
Brown, John Thomas, 1296
Brown, Mark Atkins, 1026
Brown, Michael, 795
Brown, Tony Christensen, 958
Brownlee, Hugh Ria, 493
Buckhold, Wilbert William, 340
Burdenko, Nikolai Nilovich, 52, 714
Burdett, Joseph R, 1296
Burdine, Ira Price Jr, 1296
Burgwin, Charles Wesley, 958
Burns, Sherman Moran, 493
Burrows, Lilburn Ira, 1296
Butt, William Edward, 339
Byerly, Andrew Baxter, 565
Byers, George Allan, 1166
Byrne, Cyril Joseph, 259

C

Caldicott, Francis Stephen, 1232
Caldwell, George Thomas, 1166
Camp, Foster Kendrick, 493
Camp, George Hull, 1296
Campbell, Benjamin Franklin, 1232
Campbell, Edward A., 53
Card, William Ridgeway, 1027
Carl, Allen Vincent, 259
Carpenter, William Howard, 879
Carper, Oscar Winfred, 193
Carr, John Dennis, 339
Carr, John George, 193
Carson, Ernest Marion, 493
Castaneda, Gonzalo, 492
Castleman, Frank Riley, 193
Caudill, Fred Welden, 795
Chamberlain, George Lafayette, 1027
Champlin, Henry D, 259
Chapman, George Andrew, 493
Chase, Daniel Robert, 1027
Chase, Lynn Brownell, 119
Cheever, Clarence Alonzo, 795
Chenoweth, Perthas Calvert, 417
Cherrington, John Summerfield, 119
Chievitz, Ole, 421
Chilton, William Chapman Jr, 193
Chipman, Ernest Dwight, 493
Chipman, Herbert A, 565
Christie, George Ralph, 1232
Church, Nathan W, 193
Claassen, Harry Louis, 795
Clark, Bruce, 958
Clark, Edward W, 1166
Clarke, Edward Wight, 339
Clarke, Henry Little, 339
Clarke, William Oscar, 879
Clayton, Archie Leonard, 493
Clime-Weber, Edith M, 1027
Cline, Bernard McHugh, 1296
Clouse, William Harrison, 1027
Coats, David Z, 640
Cody, Henry L, 493
Coffier, Mayer S, 119
Cohenour, Vincent Jacob, 339
Cohn, Allan Loeb, 1296
Collins, William J, 492
Collom, Clyde C, 958
Combs, Waller Glenmore, 493
Conlee, Charles C, 640
Connell, James R, 193
Cook, Charles G, 879
Cook, John Oliver, 417
Cooke, A Bennett, 493
Corns, William, 1296
Cornue, Perry Wessel, 640
Corrigan, Joseph Jr, 710
Cosby, Arthur Garfield, 417
Costanzo, Ralph Edward, 796
Coughlin, *Thomas* Francis Jr, 1232
Cox, Robert Houk, 493
Coyle, Anna Elizabeth Mulheron, 1296
Cragg, Harry Clifford, 1166
Craig, James W, 958
Crane, Homer Winfield, 493
Cravens, James A, 339
Crawford, George Minton, 640
Crawford Porter James, 640
Cremeens, George L, 493
Cressy, William Hartwell, 1296
Crikelair, Frank Leander, 1233
Crittenden, Alden Larue, 1296
Croman, Joseph M Sr, 493
Crosby, Leander Marshall, 53
Crossette, George Dart, 417
Crowe, Matthias James, 1233
Crudup, Charles Percy, 640
Culbert, William Ledlie, 259
Curry, William Jasper, 795

D

Dalphin, Percival F, 119
Darnell, Matthew Cotton, 53
Dauber, Deborah Vivian Rubenstein, 493
Davie, Mercer Stillwell, 1166
Davis, Isaac, 795
Davis, John B, 339
Davis, John Staige, 338
Davison, Charles Marshall, 338
Day, Samuel Walton, 640
Day, William Elton, 1233
Dean, Ray E, 259
Deane, Frank Herbert, 339
Dearborn, Ray Russell, 640
Deardorff, Benjamin Miles, 1027
De Grand, Alexander J, 417
Dempsey, Domnick Patrick, 493
Dennett, Alonzo Gustin, 53
Dewey, Grace, 259
Deyerle, James Henry, 640
Dickson, David A, 119
Diemer, Louis Merriew, 958
Dildine, Arthur Royal, 640
Dilley, Fred Counselman, 259
Dittman, George Claude, 795
Doern, William G., 339
Donald, Thomas Claude, 493
Donlon, Stephen Edward, 795
Donohoo, Joseph, 339
Donovan, William, 1296
Douglass, Henry Beaman, 493
Douglass, James E, 710
Downer, Earl Bishop, 795
Downey, Martin, 259
Downing, Robert Elisha, 193
Dresbach, Melvin, 193
Duclos, Joseph Achille, 259
Dulaney, Henry Parrott, 1026
Dunn, James Washington, 1027
Durrance, Frederick York, 193
Dwight, Kirby, 491
Dye, Frank Ganes, 710

E

Earling, Howard, 796
Ederer, John Joseph, 491
Edwards, George Boardman, 494
Eischeid, Rudolph John, 53
Eiseline, Daniel Alverson, 710
Elder, David G, 339
Elliott, Hiram Clifford, 640
Embry, George Estie, 795
Enfield, Charles Darwin, 193
England, John D, 417
Erhard, Elmer Sylvester, 491
Ervay, Fred Leslie, 1296
Erwin, Herbert Jones, 879
Eshleman, Edwin Franklin, 710
Etienne, Arthur O, 640

F

Farrar, George William, 339
Farrar, John O'Fallon, 1296
Favill, John, 493
Feldman, Gordon Glenn, 1166
Fenlon, Leslie Knapp, 53
Fenno, Frederic Reid, 796
Finley, Thomas R, 640
Fischer, Oscar Edward, 640
Fish, Clyde Mulhallon, 117
Fisher, Charles Edward, 1233
Fisher, Frank Crist, 1296
Fisher, Ralph Stephen, 1027
Fletcher, Emerson Armor, 491
Flotte, Camille Joseph, 1027
Flynn, William Vincent, 259
Foerter, Adolph J, 640
Foltz, Esgar Bowen, 119
Ford, Richard Bland, 879
Fortune, Hannibal Claude, 795
Foshager, Henry Theodore, 193
Fossum, Cornelius A, 1296
Foster, Frank W., 339
Foster, James LeRoy, 1027
Fournier, Marc A, 1027
Fowler, James Thomas, 1027
Fraley, James Jerdan, 417
Freeman, George McClellan, 640
Freiman, George, 795
French, DeKoven Alexander, 710
Frick, Lewis, 53
Frost, Harry Theodore, 53

G

Gaharan, James Alexander, 259
Galbreath, William Robert, 796
Gale, George Thomas, 53
Gallagher, Ambrose William, 640
Gallagher, James Griffin, 640
Galvin, Thomas Edward, 1027
Gardner, Frank Williams, 640
Garrett, Broox Cleveland, 339
Garton, Will Melville, 640
Garver, Carl Clifton, 338
Garvin, Justin Allis, 640
Gauss, Julius Henry Philip, 494
Gebhardt, Albert Alexander, 339
Geiger, Charles George, 640
Gellen, Johanna, 1296
Gerry, Carroll Hunter, 1027
Gewanter, Robert, 641
Gholston, William Dabney, 1233
Gibby, Isabelle Parker, 879
Gideon, John Relda, 1296
Gigger, Augustus George, 641
Gillespie, George Yancey Sr, 641
Giorinco, Calogero, 1027
Glaser, Mark Albert, 339
Glass, Edwin Blanchard, 641
Godfrey, Joseph Witter, 417
Goldberg, Milton, 958
Golden, Matthew Gerard, 494
Goldstein, William Hyman, 53
Goldthwaite, Harmon Reasoner, 641
Goode, George Henry, 1233
Gordon, Donald Cameron, 1026
Goss, George W., 339
Grady, Oliver George, 795
Grant, Justin Frank, 1027
Grant, Stowell Burrough, 1296
Greeley, Philip Hartson, 494
Greene, Christiana Marion, 1166
Gregg, Grant W, 119
Gregory, George Augustus, 641
Grizzard, James Alexander, 1027
Guyton, Willard Arthur Jr., 641

H

Hadley, John L, 339
Haines, Edgar James, 494
Hains, John William, 958
Hale, William, 338
Haley, Mark Joseph, 417
Hall, Bishop Adams, 641
Hall, Joseph Underwood, 417
Hall, Mercer *Freeman*, 1027
Hall, Ralph William, 641
Haller, John Paulett, 193
Hamilton, Charles William, 1296
Hamilton, Howard Eugene, 1027
Hamilton, Richard Theodore, 958
Hammond, H. Herbert, 53
Hanley, Harold Edward, 194
Hanna, John Kennedy, 339
Hansen, Lester Bryan, 1166
Hare, Charles Henry, 1232
Harin, Nicholas N, 641
Harrington, Charles D, 339
Harris, Caleb Wooster, 339
Harris, Charles Hickman, 641
Harris, Morris Louis, 259
Harris, William John, 641
Hartley, Millard I, 1166
Hartman, James Henry, 641
Hassenmiller, Martin, 339
Hawes, Ira H, 339
Hawkins, Vallandingham, 1027
Haynes, Henry M, 119
Hays, George Richard, 641
Hazard, Charles Merrill, 1296
Hazlett, Edgar Marion, 339
Heacker, *Herman Everett*, 259
Heagerty, William Brown, 119
Hell, Alva Arling, 958
Helmlich, Daniel, 795
Hemker, William Harrison, 641
Hempelmann, Louis Henry, 710
Hennessey, Edward H J, 418
Hennessy, Maurice Alphonsus Regis, 795
Henslee, Samuel Clifford, 53
Herrmann, Arthur John, 641
Hertel, Henry George, 641
Hervey, Samuel W, 795
Herzen, Piotr A, 1235
Hickman, John Samuel, 418
Hielscher, Julian Adolph, 641
Hill, Eleanor Jane, 641
Hill, Harold Phillips, 641
Hill, James Henry, 1297
Hill, James Wallace, 1027
Hirshfeld, Samuel, 641
Hittner, Henry M, 418
Hoffmann, George Henry, 1166
Hogle, William Milo, 641
Holder, Eugene Michel, 710
Holladay, Lewis, 641
Holt, William Leland, 119
Hood, Charles Edwin, 1297
Horner-Rodger, Clara Louisa, 1166
Horsford, Frederick Charles, 565
Horton, Joseph Hubert, 259
Howard, Perez Briggs, 1027
Howe, Jesse Burket, 260
Hubbard, Roger Wolcott, 53
Huff, Trent Orin, 1027
Huffman, Alonzo, 641
Hughes, Edgar Hamill 641
Hughes, John Elmer, 795
Humphrey, James Alton, 260
Hutchinson, Charles Martin, 339
Hutchinson, *Robert James*, 795
Hutton, Byrt Boone, 193
Hutzelman, Jacob Casper, 879
Hyatt-Smith, Mary Elizabeth, 641

I

Ihrke, Irvin Arthur, 879
Ilderton, John Allan, 494
Ingersoll, John Marvin, 1026
Ingrish, George Albert, 565
Ishkhanian, Nouri Iskandar, 641

J

Jack, John Jones, 1297
Jack, William George, 958
Jackson, Clarence Martin, 795
Jacobi, Stella Elora Chapman, 339
James, Norman Gilchrist, 339
James, Samuel Henry, 1027
James, William Daniel, 1027
Jarmulowsky, Harry, 1297
Jarrell, Kyle McCue, 1027
Jennings, Douglas, 565
Jobson, George Balgerie, 51
Johns, J H, 1297
Johnson, Arthur Edward, 1166
Johnson, Herbert Lewis, 1233
Jones, Edward Stanton, 565

Deaths—Continued
Jones, Isaac William, 1233
Jones, John Paul, 194
Jones, Leslie W, 418
Jordan, Grace Elizabeth Atkins, 1297

K

Kalinowski, Nicholas, 710
Karch, John McLean, 1297
Kaufman, Julius Robert, 796
Kaufman, Victor Eugene, 795
Kees, Philip Arzt, 338
Kelly, Helen Jeffery, 54
Kelly, John Frederick, 1166
Kemp, Thomas Junior, 1297
Kendall, Anson Herbert, 958
Kendall, Edward James, 1233
Kerrigan, Joseph Henry, 795
Kessler, Herman, 1233
Kilgore, Franklin Taylor, 641
Kitchen, Arthur Samuel, 54
Klingner, Thomas Otis, 795
Knabb, Frank Peter, 1297
Kneller, John Arthur, 194
Koob, William Roscoe, 1297
Koon, Thomas W., 641
Koones, Charles Kneller, 1027
Koppel, Joseph Abraham, 418
Kronrad, Lorenz, 1297
Kuegle, Frederick Henry, 260

L

LaBorde, Jean Baptiste, 1297
Lally, Bernard Vincent, 1297
Lambert, Junius L, 958
Lambert Sylvester Maxwell, 795
Lambright, Simeon, 339
Lancaster, Herschel W., 1233
Lane, Franklin Fayette, 1232
Lane, James Franklin, 641
Lane, Joseph Leon, 641
Lang, Walter William, 260
Langner, Charles A Gottlieb Jr, 1027
La Palme, Joseph Antonio 1027
Larson, Winford Porter, 958
Laudicina, August Peter, 959
La Victoire, Isaac Newton, 194
Law, John Harvey, 1026
Lawler, Charles Francis, 1027
Lawson, Wilson Terah, 641
Lay, Walter Sidders, 641
Lebedenko, Vladimir V., 52
Lebensohn, Asher Noah, 1297
Lee, Robert Louis, 493
Lemar, Fred Allard, 1027
Leslie, Thomas Everett, 642
Levin, Louis, 1027
Lewis, George Griffin, 642
Liechti, Adolf, 52
Liling, Martin, 260
Lillard, Edward Newton, 54
Lincoln, Clarence Wyman, 1297
Linder, John, 1297
Lippmann, Mortimer, 642
Lister, Sidney Mainer, 879
Littell, Hugh Franklin, 418
Little, William H., 1297
Lochner, George Emory, 1297
Logan, Raymond W, 1166
Long, Estella Claraman, 1166
Long, Felix Benjamin Jr, 120
Long, Julian Oliver, 711
Longino, Thomas Dick, 1297
Lovejoy, Walter C., 1027
Lovell Charles Dixon Smith, 958
Lovewell, Charles Hubart, 640
Lowman, Kenneth Earle, 417
Luikart, John Henry, 260
Lyman, Mial R, 339
Lynn, John Roland, 879

M

McAfee, Jesse G, 958
McBride, Robert Edwin, 1233
McCain, Paul Pressly, 119
McCarty, Perlee W, 642
McCleary, Wilbur Wallace, 54
McCollum, J Riley, 339
McConnell, William Thomas, 53
McCormack, William Eli, 494
McCullough, Edward Aloysius 339
McCune, Royal Albert, 339
McDermid, Hady Calvin, 1166
McDermott, Bernard Anthony, 642
MacDonald, James Orrille, 958
McElligott, Maurice James, 194
McFarland, William Smith, 1233
McFatrich, George W., 194
McGay, Norman Percy, 642
McGeachy, Robert Sherwood, 54
McGlinn, John A, 259
McGonagle, Thomas C., 1028
MacGregor, Charles, 1028
McKay, Donald Richard, 1233
McKay, Walter Wyatt, 1233
McKeldin, Robert Armand Watters, 642
McKeown, Ady Royal, 54
McKillip, William Joseph, 565
McKinley, Alfred Willits, 642
McKittrick, Charles Leroy, 642
McKnight, John Roy, 1297
McLauchlin, Thomas J, 959
McLean, John Howell, 53
MacMinn, Clarence Alfred, 642
McMullin, Francis Aloysius, 1028
McNamara, John Joseph, 642
Mahaffey, Howard Albert, 879
Mahr, Irving Oliver, 1028
Maier, Frederic Hurst, 959
Maillet, Herbert Albert, 565
Mallory, Roger Atkinson, 1166
Maltby, Burton, 1297
Manjoney, Philip 1028
Manley, Joseph John, 339
Maps, Howard Longstreet, 1028
Marshall Frank Fremont, 642
Martin, Francis V, 642
Martin, John Fredrick, 418
Martin, Olin Burr, 1233
Martin, William Theodore, 959
Mason, Edwin Alonzo, 565
Massengill, Samuel Evans, 959
Matousek, Frank Leslie, 1233
May, Charles Raysor, 1297
May, Raymond Victor, 1028
Meacham, William Charles, 1297
Mead, John Artemas, 1028
Mehrmann, Henry B, 340
Merriman, George Coe, 494
Mertz, Ezra Franklin, 260
Meyer, Edward Frederick, 1297
Michener, Robison E, 1028
Miller, Charles Donley, 1028
Miller, Ira Clyde, 119
Miller, Johannes Jacobus, 710
Miller, Walter Marion, 710
Miller, Wilfred Porter, 1028
Miller, William S., 260
Milligan, Samuel Cargill, 1028
Mills, William Elias, 1028
Minton, Henry McKee, 710
Mitchell, Elsie Reed, 54
Mitchell, Henry Eugene, 54
Mitchell, Stafford T, 1297
Mobley, Lewis Franklin, 340
Mock, Byron Fay, 1028
Molnar-Sasko, Helen B, 565
Moloney, Frank J, 260
Montgomery, George Wilson, 340
Montgomery, West, 340
Moore, John Claude, 1297
Moore, Nathaniel Taylor, 710
Moore, Robert Gilbert, 959
Moran, Thomas Joseph, 642
Morgan, Charles Russell, 418
Morgan, Heber Guy, 494
Morris, Benjamin Henry, 1028
Morris, Harold Arthur, 795
Morrison, Paul, 54
Moseley, Elijah Marion, 959
Mosell, Nathan F, 54
Moulton, Allen Thomas, 418
Moulton Charles A, 565
Mount, Frank Reid, 53
Mras, John Matthew, 494
Mueller, Edward William, 565
Mullen, James Kane, 642
Mullen, Michael C., 1297
Muller, George P., 1232
Mullino, Frederick M, 879
Murphy, Henry Paul, 340
Murphy, Lew Paul, 1166
Murry, Charles Miller, 418
Musgrave, George James, 494
Myers, Charles M, 1297
Myers, Leonard Albert, 879

N

Nadig, Henry Hasswell, 1297
Nagle, Patrick Eugene, 418
Neeper, Edward Rodgers, 879
Neil, Marion Blanche, 194
Neil, Marshall Banks, 1166
Nellans, Andrew Jackson, 54
Nelson, Alvin Thomas, 260
Nelson, Ira Dorman, 119
Nelson, Ivo Amazon, 194
Nenninger, John Rudolph, 494
Newton, Guy Guerdon, 1028
Nichols, Asa Burton, 260
Nicholson, Charles Everett, 1233
Nicoll, Frederick Scoville, 710
Nigg, Henry Albert, 959
Nisbett, Frank, 1028
Nittler, Adolph Nicholas, 260
Norris, John Howard, 494
Northcutt, Eugene E, 1028
Northrop, Theodore McGeachy, 1297
Novelli, Joseph Andrew, 796
Nueske, Frederick William, 1297
Nugent, Arthur John, 879
Nutter, Harry Manlove, 340

O

O'Brien, Francis Jeremiah Vincent, 565
Ogden, George Stewart, 565
Ogden, Henry O., 260
Oglesbee, William Ernest, 1233
Ohswaldt, Herman Frederick, 54
O'Leary, Charles, 1028
O'Leary, Daniel Vincent, 710
O'Neil, Frank Church, 710
Oppenhimer, Robert P., 1297
O'Quinn, Charles Augustus, 642
Osborn, James Darrah, 1296
Osborne, Lewis N., 1028
Otte, Ray Charles, 1028
Owen, William Barnett, 1232
Owsley, Guy Mannering, 1028
Ozmun, I Davis, 565

P

Paccione, Giovanni, 1298
Padgett, Earl Calvin, 1232
Paine, Robert Child, 260
Painter, Charles Fairbank, 1026
Palmer, Byron, 1233
Palmer, Earl, 418
Palmer, George Baldwin, 1298
Palmer, Louis Alfred, 959
Parks, Arthur Lloyd, 879
Paschall, Benjamin Stuart, 340
Patterson, John M., 54
Patterson, William Edward, 119
Paulman, George P., 54
Pearman, Thomas Benjamin, 1298
Pedicord, James M., 340
Pels, Isaac Rosenbaum, 1296
Pennington, John William, 53
Perenyi, Ladislaus Joseph, 1298
Perrigo, Willard S, 1166
Perry, William H., 54
Peters, Chester Moore, 642
Peters, John Dodge, 54
Pettit, William F, 1166
Phalen, Charles Stephen, 1298
Phelps, John Samuel, 1233
Phillips, Wilson Frank, 1298
Pickerel, Fred Beverly, 418
Piette, Eugene Constantine, 565
Pine, Otto Charles, 194
Pinguely, Julius E, 796
Pitman, Harry Theron, 494
Pius, Charles, 1028
Pizzuto, Benjamin Anthony, 340
Platou, Pedro, 54
Plotz, Harry, 879
Plunkett, Flavius Ogburn, 959
Poling, James Alonzo, 565
Pollard, Augustus T., 54
Pollard, William Oscar, 119
Pollock, Lee Welsey, 1232
Powell, Rosa Caldwell Turnbull, 796
Powell, William Lightfoot, 796
Pratt, Maud Ferguson, 260
Pray, Ralph Edgar, 642
Preston, John William, 958
Price, George S., 796
Price, Robert Black, 642
Prien, Roland Henry, 1298
Prigger, Edward Reuben, 1233
Prince, Lawrence Hort, 260
Proctor, John Harvey, 959
Prosperi, Milton Hickox, 418
Protzman, Elmer S, 565
Pryor, David Giltner, 194
Pucklitsch, Ernest Otto, 340
Purnell, Harry Selby, 640
Purves, Samuel Arthur, 565

Q

Quicksall, William Edward, 1028

R

Rach, Emil Arthur, 565
Rafter, Jack Roy Tayman, 340
Ragsdale, Claude E., 565
Randolph, James Henry, 710
Rasmussen, Carl Christian, 642
Ratliff, R. Ford, 120
Rau, Leonard Sigmund, 340
Ravitch, Michael Leo, 796
Record, Joseph, 959
Rector, Albert Ernest, 958
Reed, Ralph Wallace, 710
Reeder, Joseph C, 340
Reid, James D., 1298
Reid, John Inzer, 1298
Reid, Thomas Neely, 418
Reinhardt, Gustave H, 260
Remy, Charles Edward, 710
Reuben, Mark S., 796
Reynolds, Frederick Knox, 340
Reynolds, John Henry, 1298
Reynolds, William Weston, 1298
Rhea, Byrd Smith, 959
Riach, May Turner, 642
Riddick, Claudius J, 120
Riddle, Joseph Bennett, 1298
Rider, Clement J., 1298
Rieck, Walter Robert, 494
Rieckhoff, Frederick Arthur, 120
Riley, Edwin Almiron, 1233
Rinehardt, Stacy Herman, 1298
Rinehart, John Henry, 494
Rinne, John I Jr., 340
Ristine, Warren Henry, 565
Ritter, John Franklin, 1298
Rivers, Walter A., 54
Robb, David N, 340
Robins, David, 796
Robinson, Victor, 1232
Rogers, Sherman T, 1298
Rohlfing, Louis C, 1166
Rokeach, Aaron, 642
Roney, Hugh Beverly, 1298
Roseberry, Eugene C, 494
Rosenbaum, Morris, 1298
Rosenfeld, Joseph, 340
Ross, Charles Clifford, 642
Ross, Gerry Weedon, 1298
Roth, Oswald Herman, 1298
Roth, Paul, 260
Rubinstein, Harry, 120
Rushing, Stancill W., 642
Ruth, Edwin Z., 959
Ryerson, William Wellington, 565

S

St. Clair, Charles Tiffany, 418
Salmon, William John Garvey, 340
Sampson, John Albertson, 710
Sanderson, Raymond, 710
Sargent, George W., 194
Sarubbi, Paul Francis, 340
Sater, Chester I, 494
Saul, Charles Dudley, 1298
Sautter, Carl Marion, 338
Saye, Joseph H, 959
Scalson, Herman, 642
Schaefer, Anton Henry, 194
Scheffer, Cunera R., 54
Schepeler, Cortlandt Whitehead, 194
Scherer, Philip Harrison, 1298
Scherrer, Elmer A., 565
Schilling, Walter, 710
Schleiter, Howard Gustav, 1232
Schoen, Philip H., 959
Schofield, Hugh Robert, 959
Seaburg, Elmer Walfred, 711
Sedwitz, Samuel Harold, 565
Segura, Joseph Otto, 194
Seidlitz, George N., 418
Seifert, Mathias Joseph, 1298
Semerak, Joseph, 642
Senn, William Nicholas, 796
Shannon, Hugh Murdoch, 1298
Sharp, Wilfrid Dooris, 418
Shearer, Thomas Laidlaw, 642
Sheehey, John Joseph, 120
Shefferd, Jeannette M, 194
Shelton, Bennett Marion, 1298
Shepard, Oscar Henry, 120
Sherbon, Amos, 1233
Shirar, Lewis, 54
Shirley, Harold Clinkscales, 494
Shoemaker, Samuel Anise, 418
Sholty, Lloyd Otterbein, 642
Short, Francis Jerome, 418
Shoun, John Bell, 958
Sigman, Frederick Grant, 54
Siler, William Stacy Jr., 711
Simard, Adelard, 796
Simmonds, Frederick Joshua, 1233
Simpson, George Franklin, 1166
Simpson, Walter B, 959
Sinclair, William Ewing, 959
Sirles, Wayne Pulley, 711
Sivyer, Allen Walters, 1233
Slate, Wesley C., 711
Smisson, Roy Clayton, 711
Smith, David Herman, 120
Smith, Edwin M Sr., 260
Smith, Eugene Albert, 1233
Smith, Howard Hazlett, 642
Smith, Michael, 642
Smith, Milton Hamilton, 54
Smith, Richard Curtis, 418
Smith, Richard Gilchrist, 1028
Smith, Richard Manges, 1028
Smith, Roswell Haydn, 1298
Sneed, Carl Miller, 494
Snider, Joseph Scott, 194
Snowden, Charles C, 194
Snyder, Henry Galen, 959
Sparhawk, Sam, 1028
Sperry, Frederick Edward, 959
Spiegelberg, Edward Henry, 1298
Spigler, Otto Ransom, 340
Spitz, Eugene Aaron, 959
Spotswood, Dillon J., 1028
Sprague, Fred Alvah, 711
Squire, Alice Adele, 711
Srebnik, Philip, 418
Stabler, Lloyd Jesse, 1166
Stack, Eugene Anthony, 119
Stanley, William S., 120
Starkel, Charles Henry, 1026
Starr, James Oscar, 340
Stearns, Claude Adams, 796
Stegmenn, Joseph Augustus Jr., 959
Steinke, Carl Rossow, 710
Stephens, Luke B, 879
Stern, David Henry, 194
Stewart, Marshall Bruce, 1233
Stickley, Albert Edward, 1298
Stitt, John J., 565
Stitzel, Jonas Wakefield, 418
Stokes, Lydia Webster, 1298
Stoll, Henry Godfred 1166
Stone, George Henry, 958
Streuter, Louis Warren, 120

Deaths—Continued
Strong, Rae Latham, 191
Stroud, Edward Clayton, 120
Stuart, H. A., 1028
Sturgeon, George Brinton, 796
Suffron, Benjamin Franklin, 260
Sundt, Mathias, 120
Sweeney, Joseph John, 491
Swiney, Merrill Alpheus, 711
Synovec, Emil, 959

T

Talley, Dyer Findley, 1026
Tarnutzer, Benjamin Charles, 642
Taylor, George Lyman, 1233
Taylor, J. Ernest, 260
Teeter, Edmund Hershey, 260
Templeton, Frederick Glenn, 642
Terrell, Allen Price, 1166
Thatcher, Allen Horatio, 54
Thomas, Clarence Manley, 1298
Thomas, Dale Edward, 494
Thomas, John Joseph, 340
Thomas, Lewis Adam, 1166
Thompson, George A., 1166
Thompson, James Isaac, 260
Thompson, Joseph, 796
Thompson, Robert C., 1166
Thompson, Robert V., 1166
Thompson, Samuel Alexander, 879
Thomson, John William, 194
Thoren, Olga C., 796
Thornley, Roy Anson, 711
Thornton, Sir Edward, 492
Thorpe, Byron Burns, 711
Thurman, Joseph Charles, 959
Tibby, Thomas Gordon, 54
Ticen, W. E., 796
Tidwell, William Flint, 1233
Tierney, Charles Matthew, 711
Tilden, Irving Niles, 260
Timberlake, Robert Edward, 120
Timberman, Andrew Jay, 193
Todd, Lucius Newton, 959
Tolson, William Alonzo, 340
Tomer, Charles Judson, 418
Trapp, Claude W., 1028
Trawick, George Connor, 796
Trible, John Metcalf, 1233
Troy, Edward Patrick, 120
Twyman, George Thomas, 54
Tynan, Joseph Patrick, 260

U

Underwood, Dora Evangeline Judson, 1166
Urbach, Erich, 711
Utley, Ralph Emerson, 711

V

Vajda, Adalbert B., 711
Valentine, Edwin James Glass Jr., 418
Van Cleave, William Edgar, 260
Van Pelt, Roscoe Samuel, 340
Van Reed, Earl, 54
Van Valzah, Robert, 417
Verdier, Charles Edwin, 340
Verne, Victor Ernest, 711
Vogt, Benedict Jr., 711

W

Wagner, James Frederic, 120
Wagner, Otto, 120
Waite, Robert Lester, 1298
Walker, George William, 260
Walker, Hasseltine Stephens, 54
Wallace, John William, 418
Walsh, Joseph P., 340
Walsh, Thomas Gervase, 1233
Walters, John Carroll, 711
Warner, Carden Frederick, 796
Warner, John William; 54
Warren, Wilber Lloyd, 120
Watson, Henry Benjamin, 1028
Weber, Louis, 120
Weddington, James L., 418
Weeden, Allen Augustus, 1298
Wehn, Clifford Charles, 418
Wéir, Edward Andrew, 879
Welbourne, Edythe Winn, 1166
Welch, Stewart H., 259
Wells, George S., 796
Wells, Jacob Allen, 1028
Werner, Josef, 54
Werner, Richard Frank, 418
West, Frank Bryant, 260
West, Fred Donnell, 796
West, Henry Walker, 260
West, Jabez William, 120
Westerhout, Charles Edward, 494
Wheeler, Howard Pleas, 959
White, Abraham E., 796
White, Charles M., 796
White, Herbert Q., 1298
Wilde, Charles Fenwick, 492
Wilde, George David, 120
Wiley, Frank A., 959
Wilkens, John Albert, 53
Wilkinson, Alfred D., 418
Wilkinson, John G., 1028
Wilkinson, Richard E., 54
Williams, Charles B., 54
Williams, Joel Govan, 796
Williams, Lester Leo, 418
Wilson, Anna Louisa, 260
Wilson, Frank W., 194
Wilson, John Williams, 796
Wilson, Oscar Hermon, 418
Wilson, Richard Shelby, 711
Wilson, Roy Edward, 260
Winslow, Graven Fields, 418
Winslow, William Henry, 1166
Wolf, Arthur, 711
Womack, Alfred Arthur, 260
Woody, William Harvey, 1166
Woolsey, Calvin Lee, 418
Wright, Charles Osborne, 54
Wyker, Calvin Homer, 796

Y

Yarbrough, Cecil Sentell, 260
Yavorsky, William Daniel, 417
Yeaney, Gillespie Blaine, 1298
Young, James Archibald, 260
Younguc, Eugene L., 796

Z

Zimmerman, George Homer, 565
Zuckerman, David, 1028

E

EAGLEBURGER, L. S., personal, 1020
EAGLETON, W. P., request A. M. A. separate editorship and general management, 1923, [Fishbein] ★931
EAR: See also Deafness; Hearing; Oto—
  complications of streptomycin therapy, [Fowler & Seligman] ★87
  external meatus, suppurations, urea for, [Williams] 428—ab
  Middle, Infection of: See Otitis Media
  neurolabyrinthitis and congenital anhidrosis, [Helweg-Larsen] 354—ab; 895—ab
  plugs to prevent traumatic deafness, 1174
  Ringing in: See Tinnitus aurium
  symptoms in typhus, [Merel] 1318—ab
  tumors, cholesteatoma, medication to dissolve, 900
  tympanic membrane perforation, closure, 280
EARNINGS: See Fees; Income; Wages
EASTMAN Institute provides free dental care to children, Stockholm, 712
  Lecture: See Lectures
  Radiant Energy Lamps, 1008
EATING Places: See Restaurants
  Utensils: See Cooking and Eating Utensils
EATON, WILLIAM E., replies to men not allowed to resign from Navy Medical Corps., (Joint Committee report), 44
ECLAMPSIA, treatment, [Whitacre & others] ★445
  weather changes and, [Sapeika] 894—ab
ECONOMICS, MEDICAL: See also Insurance, sickness; Medical Service
  A. M. A. Bureau of Economics Research: See American Medical Association
  Physicians' Desk Reference, [Rothschild] 124—C
ECZEMA, atypical lichen planus, [Wilson] 200—ab
  Contact: See Dermatitis venenata
  fatty acids and, [Hansen] 1240—ab
  of hands from food allergy, [Rowe] 720—ab
  sensitivity to soap in, [Beek] 895—ab
EDEMA: See also Ascites
  of anterior part of body in mumps, [Chrysanthis] 354—ab
  research, Mo., 413
EDITORS, Annual Conference of: See American Medical Association, Annual Conference
  American Association of Medical Editors, [Fishbein] ★240
  medical, consults his readers, [Wiprud] 624—ab
EDUCATION: See also Children, school; Schools; Students; Teachers
  Health Education: See Health
  Higher: See University
  UNESCO, Paris conference, 342
  U. S. Department of Health, Education and Security: See Taft-Fulbright Bill
EDUCATION, MEDICAL: See also Schools, Medical; Students, Medical; University
  A. M. A. Annual Congress on, (program) 34—E; 59; (proceedings) 856—OS
  A. M. A. Council on: See American Medical Association
  course in geriatrics, Buenos Aires, 882
  current problems in, [Weiskotten] ★1045
  curriculum, proposal to shorten, Sweden, 421
  curriculum, reform, Japan, 196
EDUCATION, MEDICAL—Continued
  Fellowships: See Fellowships
  financing, 1158—E
  graduate, Michigan Postgraduate Clinical Conference (1st), 413
  graduate; of physician veterans, 944—OS
  graduate, *Postgraduate Medicine*, 1025
  graduate program successful at Yale, 253
  Graduate School: See Schools, Medical, graduate
  history of, in 1884, [Fishbein] ★241
  in Norway, 263
  Internship: See Interns and Internships
  number of J.A.M.A. (1st) 1896, [Fishbein] ★468
  plan of all-time clinical instruction in, 1921, [Fishbein] ★925
  premedical conference, Alpha Epsilon Delta, Louisville, 258
  premedical students, Puerto Rico, 51
  Residencies: See Residents and Residencies
  Scholarships: See Scholarships
  teaching, euphemisms and equivalents in, 183—E
  teaching mission (American medical) to Czechoslovakia, 546—E
  teaching nutrition, 1282—E
  training in applied basic sciences for resident, Council statement, 697—E; 717
  tribute to young physician and, by Brig. Gen. Bliss, 481—E
EFFORT: See also Exercise; Work
  Angina of: See Angina Pectoris
  cerebral hemorrhage and muscular exertion, 1320
  Syndrome: See Asthenia, neurocirculatory
EFFUSION: See Pleurisy
EGGS of flies, number, 668—ab
EISENHOWER, DWIGHT, lack of doctors is Army's chief problem, 1015
ELDERLY: See Old Age
ELECTRIC: See also Electro—; Photoelectric
  High Frequency Apparatus Treatment: See Diathermy
  shock, amount to cause fetal death? 280
  shock (fatal), first electrocution of criminals in 1891, [Fishbein] ★386
  shock, steep wave electroplexy, [Strauss]. 894—ab
  shock treatment, [Holbrook] 65—ab
  shock treatment, of psychoneuroses, [Milligan] 68—ab
  shock treatment plus insulin shock in schizophrenia, [Polatin] 726—ab
  Transcription for Radio Program: See Radio
ELECTROCARDIOGRAM: See Heart
ELECTROCOAGULATION: See Diathermy
ELECTROCOMA: See Electric shock treatment
ELECTROCUTION: See Electric shock (fatal)
ELECTROENCEPHALOGRAPHY: See Brain
ELECTROMYOGRAPHY: See Muscles
ELECTRONICS, The Diode, The Triode (motion picture review), 802
ELECTROPYREXIA: See Fever, therapeutic
ELECTROTHERAPY: See Electric shock treatment
ELECTROTHERMY: See Diathermy
ELI-606 Capsules, 568—BI
EMBALMING of Lenin's body, 1235
EMBLEMS: See Insignia
  A. M. A. Seal: See American Medical Association Council
EMBOLISM: See also Thrombosis
  large, in penicillin therapy in endocarditis, [Frada] 354—ab
  pulmonary, 55
  pulmonary fatal, in battle casualties, [Hamilton] 572—ab
  pulmonary, prognosis; treatment, [Leriche] 429—ab
  pulmonary, surgically removed foreign body embolus, [Welin] 138—ab
  pulmonary, treatment, 578
  pulmonary treatment: dicumarol, interrupting femoral vein and vena cava, thrombectomy; phlebotomy, [Allen & others] ★1268
  pulmonary (venous) air, vs. pulmonary arterial, 1276—ab
  treatment, heparin in Pitkin menstruum, [Loewe & Hirsch] ★1263
EMERGENCY hospital and ambulance centers, Los Angeles, 1227
EMESIS: See Vomiting
EMETINE hydrochloride treatment of amebiasis, 1042
  treatment in pyogenic infections, [Melchior] 503—ab
EMIGRANTS: See Immigrants
EMOTIONS: See also Melancholia; Psychosomatic Medicine
  child development center, N. Y. C., 637
  different weight responses to same provocation, [Johnson] 1238—C
EMPIRE: See British
EMPLOYEES; EMPLOYMENT: See Industrial Health; Medicolegal Abstracts at end of letter M
  Opportunities for Physicians: See Physicians, *positions open*
  United States: See United States
EMPYEMA, treatment, intrapleural penicillin for, [Callahan] 138—ab
  tuberculous, surgical treatment, [Harbitz] 142—ab
ENCEPHALITIS: See also Encephalomyelitis; Meningoencephalitis
  epidemic, in military personnel; isolate Japanese B virus on Okinawa; diagnosis; use of mouse brain vaccine, [Sabin] ★281
  Hemorrhagic: See Polioencephalitis
  virus types, arthropod-borne, [Meyer & Eddie] ★827
ENCEPHALOMENINGITIS: See Meningoencephalitis
ENCEPHALOMYELITIS, equine, purified vaccine, 940—E
  infantile toxoplasmic, 853—E
  virus or Guillain-Barré syndrome, [Wolf] 344—C
ENCEPHALOMYELOPATHY with Icterus: See Kernicterus
ENCEPHALOPATHY, Wernicke: See Polioencephalitis
ENCEPHALOSIS, dynamite, [Gerle] 142—ab
ENDAMEBA histolytica Infection: See Amebiasis; Colitis, amebic; Liver
  histolytica, penicillin effect on, [Knoll] 1242—ab
ENDARTERITIS obliterans, lumbar sympathectomy in, [Van Ouwerkerk] 652—ab
ENDOANEURYSMORRHAPHY, intrasaccular obliterative, for arteriovenous fistula, [Heringman & others] ★666

ENDOCARDITIS, bacterial, 174—ab
  bacterial, and vitamin K, [Lutembacher] 1172—ab
  bacterial, from Streptococcus s. b. e., [Loewe] 62—ab
  bacterial, of tricuspid valve, [Karotkin] 139—ab
  bacterial, penicillin treatment, large embolism during, [Frada] 354—ab
  bacterial, subacute, cellular recovery after penicillin treatment, [Moore] 724—ab
  bacterial, subacute, penicillin for, [Massell] 203—ab
  bacterial, subacute, penicillin plus *p*-aminohippurate and heparin for, [Loewe] 61—ab
  bacterial, subacute, penicillin treatment, effect of anticoagulants, [Priest] 427—ab
  gonococcic, penicillin for, [Myers] ★1205
ENDOCRINE GLANDS: See also Hormones; under names of specific glands
  Basic Endocrines nostrums, 422—BI
  factors in female sterility, [Rubin] 726—ab
  fellowship for study of, by Ayerst, McKenna and Harrison, 258
  research grants in endocrinology by National Research Council, 118
  therapy in male sterility of nonendocrine origin valueless, [Weisman] 198—C
  therapy in myasthenia gravis, 1252
ENDOMETRIOSIS, [Fallon] 351—ab
  of uterus, [Spatt] 129—ab
  pregnancy and, 436
  treatment, conservative surgery, [Beecham] 425—ab
ENDOMETRIUM, Aberrant: See Endometriosis
  cancer, vaginal smear, practical value, [*Meigs*] ★75
ENDOTRACHEAL TUBE, value, [Foregger] ★1200
ENERGY. See also Effort; Work
  Atomic: See Atomic Energy
  conservation of, 587—ab
  Metabolism. See Metabolism, basal
  Release from Food (motion picture review), 717
  required for each nerve impulse, 693—ab
  Value of Food See Calories
ENGLAND: See also British, Royal
  Anglo-French medical cooperation in West Africa, 195
  at War. See World War
ENGLISH (language), doctors urged to use "plain English," 1015
  grammar-rhetoric indicator in mental patients, [Mayer] 725—ab
ENLISTED Men or Women See World War II
ENTERIC Fever: See Typhoid
ENTEROGASTRONE, in peptic ulcer, [Greengard] 1307—ab
ENURESIS. See Urine incontinence
ENZYMES· See also under names of specific enzymes
  digest for chemical debridement of burns, 811
EOSINOPHILIA in malignant tumors, [Isaacson] 1171—ab
  Transitory Infiltration of Lungs: See Loeffler's Syndrome
  tropical, or pulmonary acariasis, [Hall] 967—ab
EOSINOPHILIC GRANULOMA: See Granuloma
EPHEDRINE sulfate, N N R, (Miller) 543
  sulfate treatment of myasthenia gravis, 1252
EPIDEMIC Jaundice. See Liver inflammation (infectious)
EPIDEMICS. See also under names of specific diseases as Diarrhea; Pneumonia
  International Epidemiologic Reporting Service by World Health Organization, 258
  Prevention: See Immunization; Vaccination
EPIDERMIS: See Skin
EPIDERMOID (cholesteatoma), medication to be used in ear to dissolve, 900
EPIDIDYMITIS, treatment, streptomycin, 855—E
EPILEPSY, clinic, Wayne County Society approves, Mich, 792
  pregnancy relation to; also menstrual epilepsy, [Burnett] 1037—ab
  treatment, hydantal, [Von Hagen] 889—ab
  treatment, tridione; mesantoin, [Lennox] 130—ab
EPINEPHRINE, action mechanism, [Staub] 353—ab
  platinum chloride or gold chloride followed by, in tattooing cornea, [Knapp] 358
  treatment of splenomegaly, 73
EPISTAXIS: See Nose hemorrhage
EPITHELIOMA, Chorioepithelioma: See Chorionic Carcinoma
EPIZOOTIC Aphthae: See Foot and Mouth Disease
EPONYMS, against, [Wolf] 344—C
EQUIPMENT: See Apparatus; Medical Supplies
ERB-Goldflam's Disease: See Myasthenia gravis
ERECTIONS: See Priapism
ERGONOVINE and posterior pituitary compatible in same syringe? 1044
ERGOTAMINE, dihydroergotamine (D.H.E 45) treatment of migraine, [Pollock] 502—ab
  tartrate (gynergen) treatment of migraine, 812
ERIODICTYOL glucoside: See Vitamins P
ERSKINE, National Committee for Employment of Handicapped, 46—OS
ERUPTIONS: See also Urticaria; under names of specific diseases as Erysipelas; Measles; Rickettsialpox; Scarlet Fever
  fixed, from sulfadiazine, [Cole] 720—ab
  Occupational: See Industrial Dermatoses
ERYSIPELAS-like eruptions, recurrent, between toes, 655
  recurrent, 1043
ERYSIPELOID, [Macaulay] 139—ab
ERYSIPELOTHRIX infection, [Ehrlich] 571—ab
ERYTHEMA: See also Lupus erythematosus
  multiforme exudativum in pneumonia, [Dingle & others] 888—ab
  Nodosum (Valley Fever): See Coccidioidomycosis
ERYTHREMIA: See Polycythemia
ERYTHROBLASTOSIS in adults, [Nordenson] 504—ab
ERYTHROBLASTOSIS, FETAL, artificial termination of pregnancy for, 479—E
  kernicterus in, [Vaughan] 203—ab
  pathogenesis, [Wiener] 885—ab
  pathogenesis, and Rh antibodies in newborn and, [Hill] 201—ab
  Rh isoimmunization, [Philpott] 1035—ab
ERYTHROCYTES, agglutination by mononucleosis serums, [Burnet] 67—ab
  changes in severe burns, [Brown] 1315—ab
  Count: See Anemia, Pernicious; Polycythemia
  rouleaux formation (excessive) in multiple myeloma, [Bayrd & Heck] ★151
  Sedimentation: See Erythrocytes
  Sickling: See Anemia, sickle cell
  virus receptor gradient [Burnet] 67—ab
ERYTHROLEUKEMIA. See Osteosclerosis myelofibrosis
ESCHERICHIA coli infection of urinary tract, streptomycin for, [Adcock & Plumb] ★579
ESOPHAGUS, cancer, food restriction vs doctor's order, England, 341
  cancer of middle third, new operation for, [Lewis] 207—ab
  cicatricial obliteration, subtotal esophagectomy in, [Sweet] 205—ab
  electrocardiogram, [Butterworth] 885—ab
  obstruction from congenital vascular ring, [Sweet] 1310—ab
  tumors, leiomyoma, successful resection, [Shafer & Kittle] ★1202
ESSAY Contest: See Prizes
ESTROGENIC SUBSTANCES, androgen ratio disorder, swelling of breast in men, 146
  Diethylstilbestrol: See Diethylstilbestrol
  lability of bone, mobilization of minerals and salts from skeleton, 110—E
  ointments containing (Council report), 1009
  solution of estrogens (in oil), N.N.R., (Miller) 543
  treatment of prostate cancer, [Ferguson] 69—ab; [Weijtlandt] 503—ab
  treatment of prostate cancer with ethinylestradiol, [McCrea] 965—ab
  vitamin B complex suppress estrogenic function in women? 1253
ESTROVIN in Oil, 883—BI
ETHER and humbug, [Graham] ★97
  Diethyl: See Diethyl Ether
  treatment (injection) of hiccup, 810
ETHICS, MEDICAL, advertising by physicians, [Fishbein] ★838
  fee splitting and rebates, [Fishbein] ★609; ★768, ★933; [Patek] 715—C
  medical journals and, P. Maxwell Foshay on, 1900, [Fishbein] ★534
  physician acting as locum tenens for colleague in hiding during the war, Denmark, 123
  physicians relationship to cultists, [Fishbein] ★100; ★175; ★924; ★933
  PRINCIPLES OF MEDICAL ETHICS, history of, [Fishbein] ★103; ★241; (in 1898) ★388; (attacks on) ★391; (revised and adopted in 1903) ★609; ★611
  responsibilities of German medical profession for atrocities; (A. M A Judicial Council report on Dr. Ivy's account) 35; [Wertham] 645—C
ETHINYL estradiol for prostate cancer, [McCrea] 965—ab
ETHYL AMINOBENZOATE, prolonging action of local anesthetics with benzocaine, 496
*tetra*ETHYLAMMONIUM ion in peripheral vascular disease and causalgia, [Berry] 66—ab
ETHYLENE DICHLORIDE (dichloroethane), 577
*di*ETHYLSTILBESTROL: See Diethylstilbestrol
6-ETHYL-THIOURACIL, thiouracil derivatives in hyperthyroidism, 544—E
EUDOLAT. See Meperidine
EUGENICS, are we becoming less intelligent as result of dysgenic breeding? 961
  program, Japan, Population Policy Commission, 185—OS
EUPHEMISMS and equivalents in teaching and practice, 183—E
EUPHORIA, habituation to demerol hydrochloride, [Curry] ★243
EVIDENCE: See also Medicolegal Abstracts at end of letter M
  A. M. A. resolution on expert witnesses, 1882, [Fishbein] ★238
EXAMINATION: See American Board; Health, U.S.P.H.S.; Physical Examination
EXAMINING BOARD: See Specialties
EXANTHEMS: See Eruptions
EXCERPTA Medica: See Journals
EXERCISE: See also Effort; Golf; Work
  effect on incidence of bends, [Burkhardt & others] ★375
  for bedridden patients, physicians accused of neglecting, 699—OS
  Therapeutic: See also Orthoptics
  therapeutic, for palate after bulbar poliomyelitis, 434
EXERTION: See Effort
EXFOLIATION: See Dermatitis exfoliativa
EXHIBIT: See also American Medical Association, Scientific Exhibit; Pasteur
  showing conquest of disablement, 566
EXOPHTHALMIC Goiter: See Goiter, Toxic
EXPECTORANTS, cough syrup, [Boyd] 716—C
EXPERIMENTATION: See Animal Experimentation; Research
EXPERT Witness: See Evidence
EXPLOSIVES: See Dynamite; *tri*Nitrotoluene
EX-SERVICE MEN: See Veterans
EXTREMITIES: See also Arms; Foot; Legs
  Amputation of: See Amputation
  Blood Supply: See Raynaud's Disease
  muscular cramps and pain in parkinsonism, 280
  Paralysis: See Paraplegia
  ulcers, powdered human blood cells for, [Anderson] 885—ab
EYEGLASSES. See Glasses
EYELIDS, diagnosis of blepharoconjunctivitis, 900
  diagnostic value of changes in margins in conjunctivitis, [Thygeson] ★437
  "Granular Lids": See Trachoma
  Sties on See Sty
EYES: See also Blindness; Cornea Glasses;
  Uvea, Vision
  (fellowship), 492
  establishes, 875
  burns from chemicals, [Cruthirds] 131—ab; [McLaughlin] 719—ab
  changes in blood dyscrasias [Tassman] 1306—ab
  congenital papillary melanosis, 714
  Disease: See also Conjunctivitis; Glaucoma; Keratoconjunctivitis; Trachoma
  disease, autonomic nervous system in, [Harrington] 719—ab
  disease, cytral for, 1235
  disease, grave eye disease, Behcet's syndrome, [Thomas] 1246—ab
  disease, scholarships for study, New York, 50; 637
  herpes zoster, meningoencephalitis after vaccination for, [Madonick] 133—ab
  intraocular pressure, goniotomy for glaucoma; [Barkan] ★526
  manifestations of psychosomatic disorders, [Harrington] ★669
  mercury deposited in, [Abramowicz] 352—ab
  movements (fusion), motor component of retinal stimuli, 713
  Muscles: See Orthoptics
  penicillin injected into, [Van Heuven] 70—ab
  penicillin (pure) use in, [Sorsby] 428—ab
EYESIGHT: See Vision

F

FABRICS: See Clothing; Rubber
FACE: See also Cheek; Eyes; Jaws; Mouth; Nose, etc.
  bony defects, reconstruction, [Macomber] 649—ab
  Creams. See Cosmetics
  hyperhidrosis, 507
  hyperhidrosis (unilateral frontal), supraorbital nerve section for, [Tarlow & Herz] ★476
  Paralysis. See Paralysis
  tumors, angiomas, treatment (reply), [Ronchese] 578
FACTORY Workers: See Industrial Health
alpha-FAGARINE, toxicity, 196
FAINTING. See Syncope
FAIRYFOOT for Bunions, 568—BI
FALLOPIAN TUBES: See Oviducts
FAMILIES: See also Children; Infants; Marriage; Maternity; and under names of diseases as Ductus Arteriosus; Glycogen disease
  intelligence level fluctuates with size of, 961
FARMERS: See also Rural Communities
  medical service program and, [Goss] 778—ab
  shoveler's disease, [Wetzel] 652—ab
  thresher's disease, [Hoffmann] 652—ab
  thresher's lung, [Tornell] 504—ab
FASCIOLOPSIS buski infection, treatment, 900
FASTING: See Starvation
FAT: See also Acid, fatty; Butter; Obesity
  brown fat extracts, effect on basal metabolism, 436
  diet high in, effect on bends, chokes, etc. [Burkhardt & others] ★374; ★376
  diet high in recovery from infectious hepatitis, [Hoagland] 499—ab
  diet with sucrose or lactose, value, [Ershoff] 1304—ab
  food restriction vs doctor's order in esophagus cancer, 341
  organs, primitive, 1283—E
  vegetable, value for growth, [Basu] 68—ab

FATIGUE: See Asthenia, neurocirculatory; Neurasthenia
FECES, blood in, probable gastrointestinal tract lesion, 278
  Fistula: See Fistula
  Loose Stools: See Diarrhea; Dysentery
FECUNDATION: See Impregnation
FEDERAL: See United States
  Control of Medical Care: See Medicine, state
  Income Tax: See Tax
  Legislation: See Laws and Legislation, federal and state (weekly summary)
  Sickness Insurance Scheme: See Wagner-Murray-Dingell Bill
  Workers: See United States employees
FEDERATION: See Societies at end of letter S
FEEDING: See Diet; Food; Nutrition
  of Infants: See Infants
FEES: See also Income; Wages
  for locum tenens, Denmark, 123
  new, for Dutch doctors, 1300
  splitting, A. M. A. resolution on, in 1902, [Fishbein] ★609; (in 1913) ★768; (also on rebates, 1924) [Fishbein] ★933
  splitting and rebates, [Patek] 715—C
FEET: See Foot
FELLOWSHIPS: See also Scholarships
  American College of Physicians, research fellowships for 1947-1948 awarded, 492
  A. M. A.: See American Medical Association
  Ayerst, McKenna and Harrison, for study of internal secretions, 258
  Eye Bank for Sight Restoration, 492
  Heed Ophthalmology Foundation, 1230
  in diabetic research established, Pa., 50
  in public health, New York State, [Amos] 124—C
  Jacobi (Mary Putnam), for medical research, 51
  programs must provide for training in applied basic sciences, Council decree, 697—E; 717
  Rosenstock Memorial Foundation, Inc., 955
  Royal College: See Royal College of Surgeons
  Schenley Distillers, in industrial medicine at U. of Pittsburgh, 638
  Trubek, in rheumatic disorders, N. Y., 49
FELON: See Paronychia
FEMUR, fracture of neck after irradiation of uterine cancer, [Kulseng-Hanssen] 574—ab
  fractures of neck, [Boyd] 1308—ab
  fractures of neck, vitallium mold arthroplasty in, [Smith-Petersen] 1308—ab
FERMENTS: See Enzymes
FERROUS: See Iron
FERTILITY: See also Reproduction; Sterility
  are we becoming less intelligent as result of dysgenic breeding? 961
FERTILIZATION: See Impregnation
FETUS: See also Infants, Newborn; Placenta; Pregnancy
  blood, oxygen pressure gradient between maternal blood and, [Barron] 207—ab
  bones of, in bladder from ectopic pregnancy, [Forshaw] 429—ab
  death, amount of electric shock to cause, 280
  death, continuous caudal anesthesia cause of, [McCormick] 801—C
  Erythroblastosis: See Erythroblastosis
  hyperplasia of islets of Langerhans in, of diabetic mothers, [Hultquist] 1318—ab
  Rh Factor in: See Rh Factor
  respiration (intrauterine), [Windle & Becker] 175—C
  sulfonamides effect on, 970
FEVER: See also Rheumatic Fever; Rocky Mountain Spotted Fever; Scarlet Fever; Typhoid; Typhus
  Aphthous: See Aphthous Fever
  Canicola: See Leptospirosis canicola
  effects of antipyretic drugs on measles eruption, 508
  Glandular: See Mononucleosis, Infectious
  headache in, [Scott] 574—ab
  Japanese River: See Tsutsugamushi Disease
  Malta: See Brucellosis
  Parrot: See Psittacosis
  Q: See Q Fever
  Rabbit: See Tularemia
  Relapsing: See Relapsing Fever
  Therapeutic: See also Malaria, therapeutic
  therapeutic, plus penicillin in neurosyphilis, [Rose & Solomon] ★6
  Undular[illegible]
  Valley: [illegible]
FIBRIN, [illegible] reactions induce[illegible]
  foam in suprapubic prostatectomy, [Quinby] 203—ab
FIBRINOLYSIS, [Macfarlane] 805—ab
FIBROBLASTOMA, perineural (neurinoma) of facial nerve, [Kettel] 63—ab
FIBROMYOMA: See Myoma
FIBROMYOSITIS and referred pain, [Slobe] 803—ab
FIBROSIS: See Pancreas
  of Bone Marrow: See Osteosclerosis myelofibrosis
FILARIASIS, treatment, lithium antimony thiomalate, [Brown] 268—ab
FILMS: See Microfilms; Moving Pictures; Photography; Roentgen Rays
FINGERS: See also Nails; Toes
  amputation of tip, new method [Kutler] ★29
  amputations, tendon sutures in, 358
FINGERNAILS: See Nails
FIRE: See Burns
FIRST AID kit, Schaffner's "Little Doc" Jr., 883—BI
FISHBEIN, MORRIS, appointment in 1913 as assistant to editor, ★769; (appointment as editor, 1924) *935
FISTULA, anal, nonoperative treatment, 435
  arteriovenous, repair; evaluate 3 operative procedures [Heringman & others] ★663
  fecal, after appendectomy, 1254
  intestinovesical, [Barnes & Hill] ★456
  vesicovaginal, apparatus to control urinary incontinence due to [Castallo] ★244
FITNESS: See Physical Fitness
FLATULENCE, decompression sickness, [Burkhardt & others] ★373; [Behnke] ★451
FLAX spider, bite, [Grille Cendan] 69—ab
FLEMING, ALEXANDER, Albert Medal to, 878
FLEXNER Lecture: See Lectures
FLIERS: See Aviation
FLIES, control conference, Ia., 954
  control, danger of DDT in hospital kitchens and dining rooms, 73
  eggs, number of, 668—ab
FLIGHT: See Aviation
FLOOD, typhoid vaccine given after, Ill., 1227
FLORITONE, 264—BI
FLOUR: See Bread
"FLU": See Influenza
FLUIDS: See also Coffee; Milk; Water
  Body: See also Ascites; Cerebrospinal Fluid; Saliva
  body, calcium content, reducing 1043
  Parenteral: See Injections
  use in craniocerebral injuries, 214
FLUKE: See Fasciolopsis buski
FLUORESCENCE, detect tubercle bacilli by, technic, [Clegg] 68—ab
  of nails after quinacrine, 1252
FLUORIDES, sodium, topical, in dental caries, [Knutson] 573—ab
  urinary excretion in men in alkylation plants, [Largent] 1309—ab
FLUORINE-dental caries hypothesis, [Downs] 499—ab
  dental caries research project, Evanston, 561
  in water safe level, 734
  industrial hazards, [Murray] 728—ab
FLUOROSIS in cattle, industrial hazard, [Murray] 728—ab
  industrial, [Green] 353—ab
FLY: See Flies
FLYERS; Flying: See Aviation
FOCAL Infection: See Infection
FOLIC Acid: See Acid
FOLLICULITIS, penicillin for, [Hopkins] 886—ab
FOOD: See also Bread; Butter; Cereal Products; Diet; Fruit; Meat; Milk; Nutrition; Restaurant; Vegetables; Vitamins
  allergens, recurrent vesicular eruption of hands, [Flood] 892—ab
  allergy, dermatitis of hands due to, [Rowe] 720—ab
  A. M. A. Council on: See American Medical Association
  Appetite for: See Appetite
  cadmium lined containers, danger, [Monnet] 729—ab
  Deficiency: See Nutrition deficiency
  efficiency of animals to produce human food, [Maynard] 202—ab
  Energy Release from (motion picture review), 717
  Energy values: See Calories
  habits and dental caries, [Neumann] 1037—ab
  handlers, course for, (Wash.) 793; (N. Y.) 1228
  handlers, gastroenteritis aboard ship, 777—E
  handlers, school for, Ga., 489
  Infants': See Infants, feeding
  Lack of: See Starvation
  needs survey, Japan, 559
  Poisoning: See also Gastroenteritis
  poisoning after Christmas party, Chicago, 412
  poisoning from cream pies, Mich., 792
  poisoning, Norway withdraws embargoed sardines, N. Y., 50; 877
  ration of U. S. Army, cost increases 32%, 789
  rationing, delivery scheme for aged to diminish overcrowding of hospitals, 643
  rationing vs. doctors order in esophagus cancer, 341
  selection and taste in hypoglycemia, [Mayer-Gross] 573—ab
  service supervisors, 47
  U. S. Food and Drug Acts: See Medicolegal Abstracts at end of letter M
  U. S. Food and Drug Administration, deaths from Analbis Suppositories, 852—E; [Weinstein] 962—C
  U. S. Food and Drug Administration, Notice of Judgment: See under American Medical Association Bureau of Investigation
  U. S. food and drug legislation, 1892, [Fishbein] ★386
  U. S. Food, Drug and Cosmetic Act, amend requiring salt be iodized, 620—E; 1161
  U. S. Pure Food Law, amending urged by A. M. A., [Fishbein] ★765
FOOT: See also Footprints; Orthopedics; Toes
  founder a disease of horses resemble human gout? 434
  recurrent erysipelas-like eruptions 655
FOOT AND MOUTH DISEASE, funds required for study of, in Mexico, 788—OS
FOOTPRINTS of newborn, permanence, [Walker] 1032—C
FORCE: See Energy
FOREIGN BODIES, embolus in pulmonary artery, surgically removed, [Welin] 138—ab
FOREIGN COUNTRIES: See United Nations; under names of specific countries as Belgium; China
FORMALDEHYDE, stability of penicillin solutions treated with, 420
FORMULARY: See also Pharmacopeia
  National, published, 52
FOSHAY, P. MAXWELL, on medical ethics and medical journals, [Fishbein] ★534
FOUNDATIONS, American, for High Blood Pressure, 117
  Childs (Jane Coffin) Memorial Fund for Medical Research, 1231
  Commonwealth Fund, (annual report) 638
  Georgia Warm Springs, 1163
  Gould (Robert) Research, training in nutrition, 708
  Heed Ophthalmology, fellowships, 1230
  Hematology Research, 412
  Hodgkin's Disease Research Foundation organized, 708
  Levy (Joseph), for research on hypertension, 490
  Life Insurance Research Fund awards for research, 957
  Luzier's allergy research fund given to American College of Allergists, 1294
  Mayo, (Dr. Victor Johnson accepts appointment to) 327—OS; (American Pharmaceutical Manufacturers Ass'n award to) 337
  Meek (Walter Joseph) Fund for superior students, 492
  Menninger, research grants, Kans., 792
  Mott, grant for graduate study, 413
  National Foundation of Infantile Paralysis, (March of Dimes) 117; 185—OS; (research director: H. M. Weaver) 257; (research meeting) 492; (grant for training medical record librarians) 622—E; 639; (grant for
  National Mental Health, educational program, 1230
    research on muscle physiology) 792
  National Science Foundation, 180—E; 184—OS; 328—OS; 537—OS; 1161
  Nuffield, gift for research in geriatrics to Cambridge, 1234
  Oklahoma Medical Research, 414
  Plotz (Ella Sachs) grant for research, 416
  Psychiatric, formed, 878
  Riggs (Austen) medical director, 792
  Rockefeller, (terminates grants to Peiping Union Medical College) 564; (grant to Center for Scientific Research, France) 960; (appropriations) 1294
  Rosenstock Memorial, Inc., fellowships, 955
  Seaman (Louis Livingston) Fund, (research in bacteriology and sanitary science), 415
  Sugar Research, prize for research on sugar, 52
FOUNDER, disease of horses, resemble human gout? 434
FOURTH OF JULY accidents, report in 1903, [Fishbein] ★610
FRACTURES: See Femur; Ribs
FRAGILITAS ossium (osteogenesis imperfecta) 434; 656
FRAMBESIA, treatment, penicillin, [Hill] 69—ab
FRANCE: See French
FRAUDS; Fraudulent Salesman: See Impostors
FRENCH Academy of Surgery, foreign members elected, 1234
  Anglo-French medical cooperation in West Africa, 195
  Congress of Medicine, to meet Oct. 1947, 1234
  Ministry for Public Health allotted streptomycin by U. S. government, 1234
FRONTAL Lobe Leukotomy: See Brain, surgery
FRUIT: See also Lemon juice; Pears; Pineapple
  citrus industry, dermatitis in, [Seidmann] 1248—ab
FRUITOLA and Traxo, 422—BI
FUADIN treatment of tuberculosis, [Rose] 269—ab
  treatment of schistosomiasis in Leyte reoccupation, [Winkenwerder] 1242—ab
FULBRIGHT-Taft Bill (S. 140): See Taft-Fulbright Bill
FUND: See Foundations
  Loan: See Students, Medical
FUNGI: See Mold
  Infections of: See Mycosis
FURACIN soluble dressing, in dermatology, [Downing & others] ★299; (sensitivity to) [Morin] 963—C
FURUNCULOSIS: See also Carbuncle
  treatment, bacitracin, [Meleney & Johnson] ★675
  treatment, penicillin, [Hopkins] 886—ab
FUSOSPIROCHETOSIS: See Angina, Vincent's

G

G I Bill of Rights, 406—OS
GALACTOSE tolerance in epidemic hepatitis, [Schneiderbaur] 1172—ab
GALLAHER, E B, pyogen spray as "cold cure," (Joint Council report), 694
GALLBLADDER See also Bile, Bile Ducts
  calculi, acute calculous cholecystitis in children, [Clavel] 895—ab
  calculi anything that will dissolve them clinically? 146
  calculi first operation for, by Dr J S Bobbs [Fishbein] *683
  calculi or colic reliable past history in jaundice, [Snell] *1176
  calculi surgical hazards, [Muir] 894—ab
  excision, diet and medication after, 213
  inflammation, complicates typhoid in child, [Sepulveda de Borquez] 1247—ab
  inflammation, surgical hazards, [Muir] 894—ab
  roentgen study, 508
  roentgen study, comparative, [Frank] 894—ab
GALLSTONES See Gallbladder calculi
GANGLION, gasserian, Kirschner electrocoagulation of, 577
GANGRENE, incidence, vascular injuries affecting, [Thomas] 650—ab
  treatment, diethyl ether, [Wirtschafter & Widmann] *604
GARFIELD, JAMES A, case history by Dr Reyburn, [Fishbein] *389, *390
GAS See under names of specific gases as Oxygen
  Embolism See Embolism, pulmonary
  Mustard See *di*Chloroethyl Sulfide
  Pain See Flatulence
  Poisoning See Carbon monoxide
GASOLINE Ethyl See Lead
GASTRECTOMY See Stomach surgery
GASTRIC See Stomach
  Ulcer See Peptic Ulcer
GASTROENTERITIS See also Food poisoning aboard ship, 777—E
GASTROENTEROLOGY, Sociedad de Gastroenterologia y Nutricion 343
GASTROINTESTINAL TRACT See also Abdomen, Intestines Stomach
  lesion probable, 278
GELATIN sponge, hemostatic dressing in anorectal surgery, [Rosser] 893—ab
GELSEMIUM in preparalytic poliomyelitis, [Holman] 136—ab
GENERAL PARALYSIS See Dementia Paralytica
GENITALS See also Penis, Vagina
  pathologic findings in menopausal bleeding, [Cheek] 425—ab
  tuberculosis (latent) as cause of sterility, [Halbrecht] 69—ab
  tuberculous primary infection, [Bjørnstad] 1248—ab
  ulcer grave eye disease with, Behcet's syndrome [Thomas] 1246—ab
GEORGETOWN University, Dr Marchetti heads gynecology obstetrics dept, 948—OS
GEORGIA Warm Springs Foundation See Foundations
GERBER'S Ready to Serve Barley Cereal, 937
GERIATRICS· See Old Age
GERMAN atrocities, Dr Ivy s report on, A M A Judicial Council report, 35
  atrocities, ethical responsibility of medical profession, [Wertham] 645—C
  medical research, unpublished 416
  occupation, physician acted as locum tenens for colleague in hiding Denmark, 123
GERMAN MEASLES See Rubella
GERMICIDES See Sterilization, Bacterial
GERMS See Bacteria
GESTATION See Pregnancy
GIARDIASIS, treatment, quinacrine hydrochloride, 74
GIBBS Memorial Prize· See Prizes
GIDDINESS· See Vertigo
GIFFORD Lecture See Lectures
GIFTS See Donations (cross reference)
GIRDLES See Corsets
GIRLS See Adolescence, Women
GLANDERS, human, 599—ab; 622—E
GLANDS See also under names of specific glands interscapular or hibernating, of Merkle, primitive fat organs 1283—E
  of Internal Secretion See Endocrine Glands
GLANDULAR FEVER See Mononucleosis, Infectious
GLASS fiber, clothing, 900
GLASSES contact lenses, [Case] 722—ab
  prescribing, rebates to ophthalmologist, [Patek] 715—C; [Fishbein] *933
GLAUCOMA, congenital, early diagnosis, goniotomy for, [Barkan] *526
  manifestations of psychosomatic disorders, [Harrington] *672
  National Society for Prevention of Blindness prize for paper on, 258
GLIOMA· See Retinoblastoma
GLOBIN Insulin See Insulin
GLOBULIN, antihemophilic, 1044
  human, use in treating virus conjunctivitis and superficial punctate keratitis, 508
  of varicella convalescents to treat herpes zoster, 55
GLOMERULONEPHRITIS See Nephritis
GLOSSITIS See Tongue inflammation
GLOVES Rubber See Rubber gloves
GLUCONATE ferrous, harmful effect of prolonged administration, 655
GLUCOSE See Dextrose
GLUCURONATE Excretion Test· See Liver function
GLYCEMIA See Blood sugar; Diabetes Mellitus
GLYCERIN-saline-acetic acid mixture for chemical debridement of burns 811
GLYCERYL TRINITRATE, treatment of angina pectoris, effect of age, [Sagall] 271—ab
GLYCINE See Acid, aminoacetic
GLYCOGEN disease, [Crawford] 728—ab
  disease familial [Abramson] 570—ab
GLYCOLS vapors for disinfecting purposes; use of glycostat 696—E
GLYCOSURIA, diagnosis (differential) 278
  pseudoglycosuria, in patients treated with penicillin, [Boldyreff] 715—C
  renal, 435, 899
GÖBELL Stockel's Operation See Urine incontinence
GOITER See also Goiter, Toxic, Hyperthyroidism
  endemic, due to lack of iodine? [Greenwald] 891—ab
  iodized salt and, pending legislation; A M A Council decision on, 620—E
GOITER TOXIC, in middle aged and elderly, [Whishaw] 352—ab
  treatment, aminothiazole (abadol), [Perrault] 353—ab
  in men [Larsen] 274—ab
  treatment in pregnancy, 655
  treatment, methyl thiouracil, [Poate] 1172—ab
  treatment, propylthiouracil [Reveno] *1190
  treatment, radioactive iodine, [Hertz] 726—ab
  treatment, thiouracil, N N R, (description) 619, (Abbott, Parke Davis, Rorer, Squibb, Winthrop) 619
GOLD chloride plus epinephrine for cornea tattooing, (reply) [Knapp] 358
  colloidal liver function test, Borowskaja method for, 734
  dermatitides, BAL for [Ragan & Boots] *752
  dermatitis exfoliativa from, 507, 733
  poisoning BAL for, [Cohen & others] *749
  poisoning BAL for thrombopenic purpura and granulocytopenia [Lockie & others] *754
GOLDEN Key Antiseptic Medicated Cream, 568—BI
GOLF American Medical Golf Association, annual tournament, 631—OS
GONADOTROPINS, chorionic growth promoting agents 898
  chorionic, Choriogonin N N R, [Lakeside] 1281
GONADS See Ovary, Testis
GONIOTOMY for congenital glaucoma, [Barkan] *526
GONOCOCCUS Endocarditis See Endocarditis
  Infection See Gonorrhea
GONORRHEA See also Endocarditis, gonococcic, Venereal Disease
  in children, penicillin for [Wiederhold] 70—ab
  incidence in men, vs circumcision, [Wilson] 1243—ab
  treatment, increasing chemoresistance, [Nørgaard] 1248—ab
  treatment, penicillin, in women, [Debray] 895—ab
  treatment penicillin, (parenterally) [Meads] 426—ab; (orally) [Bushby] 574—ab, 961
  treatment, penicillin (tablets buffered), N N R, (description) 851, (Abbott, Bristol Schenley; Squibb), 851
  treatment, streptomycin, 855—E
GOODPASTURE, E W, research and medical progress, 400—E
GORGAS memorial, 1923, [Fishbein] *931
GOULD Foundation See Foundations
GOVERNMENT See State government, United States
  Control of Medicine See Medicine, state
  Hospitals See Hospitals
GRADUATES courses etc See Education, Medical
  Fellowships See Fellowships
GRADUATES See Interns and Internships; Residents and Residencies
GRAFT See Adrenals, Bones, Cartilage; Skin, Transplantation (cross reference)
GRAIN See also Cereal Products
  mite infestation of urinary tract, [Crance] 1243—ab
GRAMMAR rhetoric indicator in mental patients, [Mayer] 725—ab
GRAND Mal See Epilepsy
GRANTS for Research See Fellowships; Foundations, Research, University
GRANULAR Lids See Trachoma
GRANULOCYTOPENIA See Agranulocytosis, Acute
GRANULOMA Coccidioidale See Coccidioidomycosis
  eosinophilic, of bone, [Dundon] 273—ab; 1284—E
  eosinophilic, of bone, relation to xanthomatosis, 776—E
  Fungoides· See Mycosis fungoides
  infectious, lesions of cervix, [Guerriero & others] *832
  inguinale, demonstration of Donovan bodies, [Lyford] 723—ab
  inguinale, false positive reactions for syphilis after tropical diseases, 73
  inguinale of cervix uteri, [Guerriero & others] *833
  intestinal, of dysenteric origin, [Silverman & Leslie] *994
  Malignant· See also Hodgkin's Disease
  malignant, of nose, [Hargrove] 140—ab
  talc, [Lichtman] 206—ab
GRAVES' Disease: See Goiter, Toxic
GREAT BRITAIN. See British, England; Royal, World War II
GREEN, FREDERICK R, assistant to secretary, 1910, [Fishbein] *762; (resignation, 1922) *927
GREEN, R D, personal, 790
GREEN, Janus, titration of streptomycin by quick method, 960
GRIFFITH, J G, JR., pitressin for hypertension, 898
GRIP See Influenza
GROUP Hospitalization: See Hospitals, expense insurance
  Insurance See Insurance
  Practice, Group Clinics. See Medicine, group practice
GROW, MALCOLM C, (John Jeffries award to) 408, (promotion) 1018
GROWTH. See also Bones, Cretinism
  promoting agent in butter. vaccenic acid, 1299
  promoting agents, 898
  value of butter fats and vegetable fats for, [Basu] 68—ab
GUANIDINE treatment of myasthenia gravis, 1252
GUERRIERO Lectureship: See Lectures
GUERRY, LeGRAND, bronze plaque, S C, 793
GUILLAIN-Barre Syndrome, treatment, neostigmine, against eponyms, [Wolf] 344—C
GUMS See Jaws, Teeth
GUT· See Catgut
GYNECOLOGY, Congress on (6th), Argentine, 343
  International Congress of, to be held July 7, 416
  Jane Todd Crawford Student Loan Fund in, 1230
  Sociedad Ycateca de Obsetricia y Ginecologia, 118
GYNERGEN See Ergotamine tartrate

H

HAEMOPHILUS See Hemophilus (cross reference)
HAIR· See also Beard, Scalp
  Loss of: See Alopecia
  picric stain, removal, 734
HAKANSSON ERIC G, U S Navy assignments, 488
HALDANE, J B S, lecture by, 331
HALL JAMES L, to resume private practice, 112—OS
HALLUCINATIONS, hypnagogic, 1253
HALLUX valgus (bunions) See Toes
HAMBY'S Dawson Springs Water, 568—BI
HAMILTON, JOHN B, editor of J A M A., [Fishbein] (1888-1889) *316, *317, (again in 1893, brief biography) *389; (death) *473
HAND. See also Fingers; Nails, Wrist
  artificial, model, 408
  atopic dermatitis, from food allergy, [Rowe] 720—ab
  tendon transplantation in, [May] 206—ab
  vesicular eruption (recurrent), [Flood] 892—ab
HANDICAPPED: See also Disability, Physical Defects
  civilians model center for rehabilitation, 327—OS
  National Committee for Employment of, 46—OS
  Veterans See Veterans, disabled
HARNESS, restraining, for aircraft pilots, [Bierman & others] *522
HARRIS, MALCOLM L, acts as editor of J A M A during Dr Simmons' absence [Fishbein] *769
HARRISON, L W., retirement of great venereologist, 566
HARRISON Narcotic Law, 1915, [Fishbein] *837
HARVEY Lecture See Lectures
HASKELL, CHARLES C., & Co, assay of thiamine in Pantabee, [Haskell] 645—C

- HAWLEY PAUL R (medical chief criticizes Legion for opposition to medical reforms) 699—OS (lectures at Naval Medical Center) 703, (warns medical work in VA periled by lack of funds) 787—OS
- HAY FEVER antihistamine drugs and hypertension, 812
  - pollen desensitization during pregnancy contraindicated? Similar allergy in child? 1174
- HAYDEN'S Carmelized Wheat Germ 264—BI
- HEAD See also Brain, Cranium, Face, Hair Neck Scalp
  - Bald See Alopecia
  - injuries cerebellar subdural hydroma, [Grant] 889—ab
  - injuries, electroencephalogram in, [Laufer] 724—ab
  - injuries (minor), vertigo after, cause, treatment 434
  - Lice See Pediculosis
  - Pain See Headache
  - tremor cataract surgery in patient with, 278
- HEADACHE See also Migraine
  - after spinal anesthesia, vitamin B_1 for, [Bazzocchi] 430—ab
  - Costen's syndrome and head pain, [Bell] 208—ab
  - dynamite encephalosis [Gerle] 142—ab
  - febrile [Scott] 574—ab
  - treatment nicotinic acid 1044
- HEALERS, Drugless See Cults
- HEALING See Wounds
- HEALTH See also Disease, Hygiene, Sanitation
  - activities in Latin America, 118
  - atomic energy and [Lyon] 725—ab
  - Board of See Health, department, Health, state board
  - Center See also Medical Center
  - center definition (Reference Committee report), 36
  - center for rural areas [Weagley] 781—ab; [Davis] 860—ab, (Committee report), 860—OS
  - center of the world Bethesda becoming, 482—OS
  - challenge of our schools, 696—E
  - Child Health Day May 1st, 1219—OS
  - Clauses See Industrial Trade Unions
  - conditions reported by Gen MacArthur, Japan, 252
  - council as agency ,to promote rural health, committee report [Jones] 864—ab
  - Council of Greater New York, N Y, 706
  - department of Chicago closes restaurants, 252 875
  - department of New York City (80th year), 116 (annual report), 256, (closes 5 restaurants) 1229
  - departments consolidate Ill, 1227
  - departments (county), 17 counties vote for, Ill 334
  - departments (state), in 1872 [Fishbein] *102
  - departments (state), reorganize, Minn, 562
  - districts Connecticut Medical Society supports establishing 412
  - education by American Red Cross 1289
  - education conference N Y C 414
  - education school, W Va, 491
  - Examination See Physical Examination
  - French Ministry for Public Health allotted streptomycin by U S government, 1234
  - Fund See Industrial Trade Unions
  - in aging population, 414
  - Industrial See Industrial Health
  - Insurance See Insurance sickness
  - International Health Congress, Puerto Rico, 1230
  - legislation beneficial to the people A M A resolution on, 40
  - Mental See Mental Hygiene
  - museum Cleveland, 1024
  - National Advisory Health Council, (membership) 790 (medical research grants recommended by) 1289
  - National Conference on Health in Colleges (3rd), 1217—E
  - National Health Agency, 855—E 868—OS
  - National Health Bill (Taft Smith Ball-Donnell) See Taft
  - National Health Congress (Reference Committee report) 36, (expands program) 639
  - National Health Program Bill to Provide See Wagner Murray-Dingell Bill
  - National Health Service Act (Beveridge Plan British 'White Paper') See National Health Service Act
  - National Institute of, (activities) 702, (Council discusses) 851
  - National Negro Health Week, March 30 April 6, 708
  - nursing center opened in Chinatown, N Y, 876
  - of Recruits See World War II
  - of the people and hospitals, [Parran] *1047
  - officers (local), qualifications revised, N Y, 190
  - Organization of United Nations See Health World Health Organization
  - planning for by Senator Taft and President Truman, 180—E
  - program state aid for, N Y, 335
  - Program Voluntary See Wagner Murray-Dingell Bill
- HEALTH—Continued
  - project in A M A Bureau of Health Education, 915—OS
  - projects planning FWA funds for, 793
  - public, Buenos Aires, 882
  - public field of [Green] 627—ab
  - Public Health Education Committee of Women 1910 [Fishbein] *762
  - Public Health Institute closes its doors Chicago, 134
  - Public Health Nurses, Nursing See Nurses, Nursing
  - public positions open, New York State, [Amos] 124—C
  - public, request A M A to publish periodical on [Fishbein] *762 *766
  - public, training program for physicians, (Illinois) 255, (Kansas) 561
  - public, Tulane U offers degree in, 561
  - referendum Italy, 881
  - resorts, American, A M A Committee activities referred to A M A Council, 936
  - Rural See Rural Communities
  - School See Schools
  - Service See also Health centers, Health, National Health Service, Medical Service
  - service and research at Los Alamos project, 115
  - services (child), study by American Academy on Pediatrics, (A. M A Reference Committee report), 40
  - services investigation in South Australia, 1031
  - state boards, [Fishbein] *175, *176
  - Statistics See Vital Statistics
  - Supplies See Medical Supplies
  - survey, (Cook County) 49, (7 cities, Calif) 791
  - UNRRA health division closes, 638
  - U S Department of, advocated by A M A. in 1888, 1891, [Fishbein] *315, *386, *387; *769; * 926
  - U S Department of Health, Education and Security (Fulbright-Taft Bill), 180—E, 185—OS, 398—L, 482—OS, (Joint Committee report) 943—OS, (A M A position on) 1015, (conclusion of hearings) 1159—OS
  - U S Dept of National Health (Miller Bill) 185—OS
  - U S Department of, with cabinet officer, [Fllett] 1032—C
  - U S P H S, (release of medical officers, Joint Committee report) 45, (seeks new medical research center) 45—OS, (125 Army medical officers released to) 46—OS, (examinat' gan- ization rch) 187, of nurses) ular corps) alth Divisio oint- ment of pharmacists) 409, (cancer survey) 482—OS, (seeks 50 million dollars to start hospital (annual report) councils, members on BCG vaccination) 1158—E, (survey of medical profession in Washington, D C) 1159—OS, (survey of medical groups in U S) [Dickinson] *1222, (headquarters moved to Social Security Building) 1289 (list of officers released from service) 1289, (venereal disease pamphlets by) 1294
  - Units See Health centers
  - Welfare Programs See Industrial Trade Unions
  - World Health Organization (Calderone heads Interim Commission) 117, (international epidemiologic reporting service by Interim Commission) 258, (outline of work) 405—OS, (constitution USPHS annual report) 702 (constitution expected to be ratified) 788—OS, (Interim Commission meets March 31) 956, (joint resolution providing for membership and participation by United States) 1221—OS, (allocate UNRRA funds to) 1231
- HEARING See also Ear
  - aids Beltone Harmony Mono Pac, 543
  - aids course in audiometry and fitting, Iowa, 1292
  - aids, Maico atomeer, 542
  - aids, Trimm vacuum tube, 542
  - impaired after streptomycin therapy, [Fowler & Seligman] *87
  - Loss of See Deafness
  - rehabilitation (center opened, D C) 408; (program, Illinois) 561
- HEART See also Arteries, coronary, Cardiovascular system
  - anomalies, anastomosis of systemic artery to pulmonary artery for blue baby, 248—E
  - anomalies, congenital pulmonic valve stenosis, surgery for, [Fine] 426—ab
  - Auricular Fibrillation See Auricular Fibrillation
  - block (complete) from digitalis, [Wagener] 200—ab
  - course in cardiology, Wis 51
  - Disease See also Endocarditis
  - disease (congenital) arterial anastomosis for blue baby 248—E
  - disease (congenital), surgical treatment, [Fashena] 893—ab
  - disease Herrick House for convalescent children Ill 636
- HEART—Continued
  - Disease (Hypertensive) See Heart insufficiency
  - disease, rheumatic, clinic (5th) established, Pa, 336
  - disease, rheumatoid arthritis, [Rogen] 1315—ab
  - disease sclerogenic, from avitaminosis B_1, [Bianchi] 430—ab
  - disease, sudden deaths of young soldiers, 321—E [Moritz] 721—ab
  - disorders in polyarthritis, [Applegren] 895—ab
  - electrocardiogram changes [Sensenbach] 348—ab
  - electrocardiogram changes due to inanition, [Forster] 730—ab
  - electrocardiogram, esophageal, [Butterworth] 885—ab
  - electrocardiogram in Besnier-Boeck-Schaumann's disease, [Leitner] 730—ab
  - electrocardiogram in hypertension, [Filley] 270—ab
  - electrocardiogram in malignant diphtheria, [Giraud] 353—ab
  - electrocardiogram in peptic ulcer [Ørning] 208—ab
  - electrocardiography (direct) in restored human heart after death, [Andreyev] 431—ab
  - Failure See Heart insufficiency
  - hypertrophy and acromegaly, [Schornagel] 1172 ab
  - in severe anemia, [Gelfand] 651—ab
  - insufficiency, diet low in salt and sodium in congestive failure [Wheeler & others] *16, (early work of Hermann Strauss in 1902) [Gossels] 497—C
  - insufficiency, familial incidence of failure, [von Rechenberg] 141—ab
  - insufficiency, prophylactic digitalization 508
  - insufficiency, renin in failure [Merrill] 424—ab
  - insufficiency, sudden death, pathologic anatomy, [Munck] 968—ab
  - insufficiency, 2-thiouracil for congestive failure [Sharpey-Schafer] 805—ab
  - Inter-American Congress of Cardiology (2nd), 639
  - Irritable See Asthenia neurocirculatory
  - lesions in pul—
  - Muscle See
  - National Hea
  - Neurosis See Asthenia, neurocirculatory
  - Output See Blood circulation
  - Rate See also Tachycardia
  - rate, humoral transmission of vagal and accelerator effects, 761—ab
  - Rhythm See Arrhythmia
  - size, roentgen determination, [Denstad] 1038—ab
  - Valve See Mitral Valve, Pulmonary Valve, Tricuspid Valve
- HEARTBURN in pregnancy, [Roth] 427—ab
  - pyrosis, [Schepers] 127—ab
- HEAT See also Burns, Fever, Steam, Tropics
  - Production See Metabolism, basal
  - Therapeutic Use See also Diathermy, Fever, therapeutic
  - therapeutic use, Eastman Radiant Energy Lamps 1008
  - therapeutic use of (motion picture review), 802
- HEED Foundation See Foundations
- HEKTOEN, LUDVIG, progress with the JOURNAL, 1895, [Fishbein] *466
- HEKTOEN Lecture See Lectures
- HELIO Minerals, 264—BI
- HELPING Hand Laxative Tonic, 882—BI
- HEMATEMESIS, peptic ulcer incidence in, [Cluer] 274—ab
  - probable gastrointestinal lesion, 278
- HEMATOCRIT values in wound shock, [Stewart] *216
- HEMATOLOGY. See Blood
  - Research Foundation See Foundations
- HEMATOPOIESIS See Blood formation
- HEMATOPORPHYRINURIA See Porphyria
- HEMOGLOBIN See also Methemoglobinemia
  - blood carboxyhemoglobin in aviators, [Pitts] 1304—ab
  - etiology of chloroma and nature of green pigment, [Humble] 729—ab
  - in late pregnancy and puerperium 1254
  - values in women workers [Davies] 728—ab
- HEMOGLOBINURIC FEVER, Malarial Black Water Fever See Malaria
- HEMOLYSIS See Jaundice hemolytic
  - Disease Involving, in Newborn See Erythroblastosis, Fetal
- HEMOPHILIA See also Pseudohemophilia
  - antihemophilic globulin, 1044
  - coagulating property of blood in, [Chevallier] 353—ab
  - heredity of hemophiliac factor, [Weil] 1172—ab
  - treatment, roentgen, [Ostro] 205—ab
- HEMOPHILUS ducreyi. See Chancroid
  - Influenzae Infection See Influenza
- HEMOPTYSIS, treatment, temporary elimination of phrenic nerve, [Stangl] 431—ab
- HEMORRHAGE See also Hemophilia, Purpura, Telangiectasia, under names of diseases and organs affected as Nose, Peptic Ulcer, Uterus

HEMORRHAGE—Continued
  blood loss in operations, [Baronofsky] 1036—ab
  control, hemostatic dressing in anorectal surgery, [Rosser] 893—ab
  fatal allergic reaction to influenza vaccine, [*Curphey*] ★1062
  Menstrual: See Menstruation
  posttransfusion, death in infant, 811
  Prothrombin relation to· See Blood coagulation, Blood prothrombin
HEMOSTASIS See Hemorrhage control
HEMOTHERAPY. See Blood Transfusion
HEPARIN, anticoagulant and coronary thrombosis, 970
  effect on penicillin in endocarditis, [Priest] 427—ab
  in Pitkin menstruum for venous thromboembolic disease, [Loewe & Hirsch] ★1263
  sodium, N N R, (description) 1009; (Abbott, Upjohn) 1009
  treatment of acute coronary occlusion, 357
  treatment plus penicillin and sodium para-aminohippurate in endocarditis, [Loewe] 61—ab
HEPATIC See Liver
HEPATITIS. See Liver inflammation
HEPATOMEGALY See Liver hypertrophy
HEREDITY See also Anaphylaxis and Allergy; Dystrophy, muscular, Eugenics, Myopia, *Nystagmus, Retinoblastoma; Telangiectasia*
  of hemophiliac factor, [Weil] 1172—ab
  symposium on, N. Y, 1230
HERNIA, keloid, of anterior tibial muscle, (reply) [McKeever] 214
  of Meninges See Meningocele
  scrotal duration, 1044
  ventral, repair, and cesarean section, 507
HEROES See also Martyrs, World War II, Heroes
  typhus in research workers and others, [Sadusk] ★1194
HERPES zoster ophthalmicus, meningoencephalitis after vaccination for, [Madonick] 133—ab
  zoster, treatment by globulins of varicella convalescents 55
  zoster treatment of pain after, 733
HERRICK House for convalescent children, Ill, 636
HERZEN, PIOTR A, death, 1235
HESPERIDIN See Vitamins P
HEXAMETHYLENAMINE See Methenamine
HEXYLRESORCINOL, effects on surface tension of urine, [Inness-Brown] 1301—C
HIBERNATION and pituitary hypertrophy, 656
  hibernating or interscapular gland of Meikle, primitive fat organs, 1283—E
HICCUP treatment· nikethamide, *also carbon* dioxide inhalation and ether injection, 810
HIGH Blood Pressure See Blood Pressure
  Frequency Apparatus· See Diathermy
HILL-BURTON ACT, (A M A Reference Committee report), 36, (state agencies to administer) 187; (regulations for hospital survey) 560 [various authors] 860—ab, (general regulations promulgated under) 946—OS, [Parran] ★1047
HILLMAN, CHARLES G., retires, 408
HI-LO Tablets, 883—BI
HIMROD'S Asthma Powder, 883—BI
HIP. See Femur; Pelvis
HIRSCHSPRUNG'S Disease. See Colon, mega-*colon*
HISPANO See Spanish
HISTAMINE, Antihistamines· See also Benadryl
  antihistamines, [Friedlaender] 1309—ab
  antihistamines and hypertension, 812
  antihistamines Cytral, 1235
  antihistamines for penicillin urticaria [Pillsbury & others] ★1255
  antihistamines *(3015 and 3277)*, 960
  elaboration in vivo, in peripheral vascular disorders, [Wirtschafter & *Widmann*] ★604
  treatment (intravenous) of prolonged reaction to benadryl, [Schwartzberg & Willerson] ★393; [David & Karr] 1301—C
  treatment of allergic conditions, [Brown] 207—ab
  treatment of arthritis, 212
1 (—) HISTIDINE monohydrochloride-sodium ascorbate injection in peripheral vascular disorders, [Wirtschafter & Widmann] ★605
HISTOLOGY: See Tissues
HISTOPLASMIN, reactors, calcifications in spleen in [High] 804—ab
  sensitivity, [Christie] 202—ab
HISTORY of A M. A: See American Medical Association
  of Medicine See Medicine, history
HIVES. See Urticaria
HOBBIES. See Physicians, avocations
HODGKIN'S DISEASE in children, [Wright] 722—ab
  Research Foundation organized, 708
HOGS: See Trichinosis
HOLLAND: See Netherlands
HOLLISTER, JOHN H, Chicago vs. Washington permanent home of A. M. A., [Fishbein] ★384; ★389
HOLMAN, ALBERT W., gift for chorionepithelioma registry, 192
HOLMES, OLIVER WENDELL, [Fishbein] (gave private library to Boston Medical School) ★317, (death of) ★392
HOME: See also Housing
  danger in kitchen, 1295
HOMEOPATHY, problems, 1878, [Fishbein] ★176
HOMICIDES See Murder
HONORABLE DISCHARGE See World War II, medical officers released
HOOD-LAX, Dr. Parrish's frauds, 57—BI
HOOKWORM: See Ancylostomiasis
HOOVER Medal: See Prizes
HORMONES· See also Endocrine Glands
  lability of bone, mobilization of minerals and salts from skeleton, 110—E
  Sex See Androgens; Estrogenic Substances; Gonadotropins
  treatment of myasthenia gravis, 1252
HORSES, founder resemble human gout? 434
HOSPITALIZATION Insurance. See Hospitals, expense insurance, Medical Service Plans
HOSPITALS. See also Clinics; Medicolegal Abstracts at end of letter M
  administration course at Washington U., 1163
  administration program, State University of Iowa, 1163
  A M A Council on See American Medical Association
  Army air base, taken over by tuberculosis board, Fla, 791
  Army, construction program, 1947, 47
  Army Mayo General, leased to U. of Illinois, 255
  Army, residencies in, ★1080
  Army, streptomycin therapy in, [DeBakey] 1036—ab
  Army 36th General, history, 329
  Barnard Hospital Lecture, See Lectures
  Beds See also Hospitals, veterans
  beds, capacity, ★1066
  beds occupied, percentage, ★1073
  Blessing, Adams County Medical Society resolution on policies on, Quincy, Ill, 489
  Blue Cross Plans. See under Hospitals, expense insurance
  Boston City Hospital Lecture· See Lectures
  Building. See also Hospitals, Army; Hospitals, veterans
  building fund, Pratt gift to, New York, 413
  Building, Hill-Burton Act. See Hill Burton Act
  building program, proposed, Puerto Rico, 336; 1165
  building, report on efforts of National Grange, [Halvorson] 781—ab
  building, U S P.H S seeks fifty million dollars to start, 556—OS
  Cancer See Cancer
  Care· See Hospitals, service
  Center. See also Medical Center
  center, Washington, D C, (Swedish hospital as model for) 184—OS, (sites for) 250—OS
  children's, ★1066, ★1072
  children's classroom in, Colo, 1291
  Children's Memorial, Northwestern U affiliates with, 1023
  Construction. See Hospitals, building
  convalescent and rest, ★1066, ★1072
  Cook County, 2 year internship required, Ill, 791
  cost of operating, [Buerki] 782—ab
  county, new, Orange County, Cal, 636
  Department for Continued Care of long term illness, [Bluestone] ★1051
  emergency, and ambulance centers, Los Angeles, 1227
  Employees: See Hospitals, personnel
  Evanston, expands, Ill, 875
  Expense Insurance: See also Medical Service Plans, Medicolegal Abstracts at end of letter M
  expense insurance, Blue Cross for rural communities, [Mertz] 782—ab
  expense insurance, Blue Cross, membership in, Puerto Rico, 336
  expense insurance, rural enrolment experience, [Helsby] 407—OS
  Facilities. See also Hospitals service
  facilities and health centers for rural areas, [Weagley] 781—ab
  facilities by states and by control, ★1068
  facilities division, director, 708
  facilities for rural areas, [Weagley] 781—ab; [Davis] 860—ab; (Committee report) 860—OS
  facilities, number, size and classification, ★1066, ★1067
  food delivery scheme for aged to diminish overcrowding of hospitals, 643
  Government. See also Hospitals, building; Hospitals, service; Hospitals, veterans
  government, facilities by states, ★1068
  government plan for taking over voluntary hospitals, England, 195
  Group Hospitalization: See Hospitals, expense insurance
  growth, summary, 1909-1946, ★1066
  Harding, opened, April 1, N Y. C, 1164
  health of people and, [Parran] ★1047
  in Spain, 343
  industrial, ★1066; ★1071
  Insurance: See Hospitals, expense insurance
  Interns; Internships: See Interns and Internship
HOSPITALS—Continued
  isolation, ★1066; ★1072
  John Sealy, Texas, 1164
  Kern County, investigation, Calif, 1291
  Kings County, plaque to 816 war veterans, 955
  kitchens, danger from DDT used to control flies, 73
  licensing law, model, 946—OS
  maternity, ★1066; ★1071
  maternity service, births in, ★1074
  Medical Service Plans· See Hospitals, expense insurance
  Metropolitan, site for, N. Y., 935
  Military: See Hospitals, Army, Hospitals, Naval
  Naval, closes, New Orleans, 114
  Naval, corps, medical administrator, 406—OS
  Naval, corpsmen, Surgeon General lauds, 699—OS
  Naval, residencies in, ★1080
  necropsy rate (highest), 1946, ★1082
  Neuropsychiatric: See Hospitals, psychiatric number, April 12, 1947, page 1065
  Number of: See Hospitals, service
  nursery, diarrhea epidemic in, secondary to milk-borne epidemic, [Ensign] 271—ab
  nursery, measures to protect newborn, [Weymuller & others] ★78
  Nurses See Nurses
  orthopedic, ★1066; ★1072
  orthopedic, new, Sitka, Alaska, 336
  patients admitted 1946, ★1067
  patients, average daily census, ★1073
  patients, average length of stay, ★1074
  Personnel· See also Hospitals, staff; Nurses
  personnel, employment of practical nurses, 631—OS
  personnel (technical), statistics on, ★1077; 1158—E
  personnel, ward helpers, N Y, 490
  Psychiatric· See also Hospitals, state
  psychiatric, ★1066, ★1071
  psychiatric, American, brutalities in; vs. ethical responsibilities of German medical profession, [Wertham] 645—C
  psychiatric: Franklin Delano Roosevelt, 790
  psychiatric (new), Sweden, 1300
  psychiatric, St Elizabeths, (Overholser opposes transfer to D C) 250—OS, (status) 631—OS
  Records See Medical Record Librarians
  registered by A. M. A., list of, ★1083-★1143
  rehabilitation, for spastic children, 256
  Residents; Residencies: See Residents and Residencies
  Rochester General, centennial 1228
  St Barnabas, for Chronic Diseases, 706
  St. Luke's, bequest to, Chicago, 954
  St. Luke's, U S Army occupies, Tokyo, 789
  St Vincent's, Alfred E Smith Memorial Wing, 955
  Service: See also Hospitals, facilities, Hospitals, maternity service, Medical Service Plans
  service accommodation in Norway, 1167
  service classified by control, ★1066; ★1068; ★1069; ★1070
  service, committee on purchase of, 791
  service, counties without, Ill, 791
  service, data according to type of, ★1066; ★1071
  service in U S, ★1065; 1155—E
  service, organization in Chile, 1167
  Service Plans: See Hospitals, expense insurance, Medicolegal Abstracts at end of letter M
  Staff· See also Hospitals, personnel
  staff appointment, difficult for physician veterans to secure, (Joint Committee report) 45
  staff, general practitioners on, vs. specialists, [Gariepy] 1169—C
  staff members, rules governing moral conduct, fee splitting and rebates, [Patek] 715—C
  staff, physician veterans want hospitals to employ doctors with military service, 184
  staff physicians strike settled, Stockholm, 421
  staff salaries of junior doctors, Norway, 797
  staff, shortage of doctors, 556—OS
  standardization by A. M A, 1918, [Fishbein] ★843
  State. See also Hospitals, psychiatric
  state, campaign to improve mental care, Ill, 561
  state, Egyptian, nursing service, appalling corruption, 1299
  Stockholm, (physicians strike settled) 421; (no visitors allowed), 712
  Survey and Construction Act: See Hill-Burton Bill
  Sydenham, emergency fund raised, N. Y, 876
  USPHS, residencies in, ★1080
  Veterans: See also Veterans, medical care
  veterans admitted in 1946, 1020
  veterans, at Tomah, Wis, 790
  veterans' beds (100,000), 113
  veterans, bids for, in North Dakota, 253
  veteran's care program, Hawley stresses need of private hospitals in, 45—*OS*
  veterans, delays in providing, 405—OS
  veterans, Franklin Delano Roosevelt neuropsychiatric, 790

488
arracks, 113
veterans, new contracts blocked, 1159—OS
veterans, new managers, 1289
veterans, news about, 331
veterans, plans approved, Arlington, 556—OS
veterans, proposed cancer hospital in Chicago, 253
veterans, residencies in, (work by medical schools under deans' committees) 855—E; (round-table discussion) 856—ab; ★1081
veterans, site, VA asks condemnation, 871—OS
Wesley staff honors Dr. M. Goldstine, 489
HOUSING: See also Buildings; Home
living quarters for interns in Japan, 196
HOUSSAY, B. A., retirement, 196
HOXSEY, HARRY M., cancer charlatan, 774—E; (correction) 957
HUNGER: See Appetite; Starvation
HUTCHINSON, Sir JONATHAN, biography, 1029
HUZZAH, A Vitamin B1 & B2 Supplement, 422—BI
HYDANTAL, use in epilepsy, [Von Hagen] 889—ab
HYDATIDIFORM Mole: See Placenta tumors
HYDE, E. E., death, appointment of Dr. Fishbein in 1913, [Fishbein] ★769
HYDRAPHORUS with Cinchona, 422—BI
HYDROLYSATES: See Protein
HYDROMA: See Hygroma
HYDROPHOBIA: See Rabies
HYDROSULPHOSOL, treatment of corneal and x-ray burns, [Cruthirds] 131—ab
HYDROTHERAPY (motion picture review), 802
HYDROXYCOUMARIN, Methylene Bis: See Dicumarol
HYGIENE: See Health; Sanitation
Dental: See Dentistry
Industrial: See Industrial Hygiene
Mental: See Mental Hygiene
HYGROMA, cerebellar subdural, [Grant] 889—ab
HYPERCHOLESTEREMIA: See Blood cholesterol
HYPERHIDROSIS: See Sweat
HYPERINSULINISM: See Pancreas, secretion
HYPERPARATHYROIDISM: See Parathyroid
HYPERPNEA: See Respiration, hyperventilation
HYPERNEPHROMA, bilateral, [Senger] 1311—ab
HYPERPROTEINEMIA: See Blood proteins
HYPERPYREXIA: See Fever, therapeutic
HYPERSENSITIVITY: See Anaphylaxis and Allergy
HYPERTENSION: See Blood Pressure, high
so Goiter
atic diabetes, 195
r, 73
[Frisk] 574—ab
treatment, propylthiouracil, [Astwood] 500—ab
treatment, radioactive iodine, [Hertz] 726—ab
treatment, thiouracil derivatives, 544—E; [Bartels] 893—ab; [Hadorn] 967—ab
treatment, thiouracil, N.N.R., (description) 619; (Abbott; Parke Davis; Rorer; Squibb; Winthrop) 619
HYPERTROPHY: See Splenomegaly; under specific organs as Heart; Liver; Pituitary; Prostate; Thymus
HYPERVENTILATION: See Respiration
HYPNAGOGIC Hallucinations: See Hallucinations
HYPNOTICS: See Sedatives
HYPOGLYCEMIA: See Blood sugar
HYPOPHYSIS: See Pituitary
HYPOPROTHROMBINEMIA: See Blood prothrombin
HYPOTHERMIA: See Crymotherapy
HYPOTHYROIDISM: See also Cretinism
bone age studies, [Dutton] 965—ab
HYPOVITAMINOSIS: See Vitamins deficiency; under names of specific vitamins
HYPOXIA: See Oxygen deficiency
HYSTERIA, canine, and diet, [Mellanby] 805—ab
ocular manifestations, [Harrington] ★673

I

ICE Anesthesia: See Anesthesia, refrigeration
local use after orthopedic procedures, [Schaubel] 269—ab
local use in leg injury, [Pernworth] 1308—ab
ICTERUS: See Jaundice
Encephalomyelopathy with: See Kernicterus
Gravis: See Liver atrophy (acute yellow)
IDENTIFICATION: See also Emblems; Insignia
of newborn by footprints, [Walker] 1032—C
IDIOSYNCRASY: See Anaphylaxis and Allergy
ILLEGAL Operation: See Abortion, criminal
ILLINOIS: See Chicago
University of: See University
ILLNESS: See Disease
IMMIGRANTS, nonimmigrant entry authorized for doctors, Puerto Rico, 638
IMMUNITY: See also Antibodies; and under names of specific diseases as Influenza; Liver inflammation; Malaria; Poliomyelitis
developed to transplanted tumors, Besredka's theory, 111—E; [Gross] 800—C
IMMUNIZATION: See also Vaccination; under names of specific diseases as Influenza; Tuberculosis; Typhus
countywide, Ind., 189
for Kenya colony, 434
IMPACT decelerator, [Bierman & others] ★522
IMPETIGO, treatment, bacitracin, [Meleney & Johnson] ★675
IMPORTED Sea Vegetables Vitaminized with Added Vitamin A, 883—BI
IMPOSTOR, warning of: Brooks Mendell, 492
warning of: E. G. King, 1230
IMPOTENCE, barbiturates prolonged use effect on, 279
complications of spinal anesthesia, [Mason] 345—C
IMPREGNATION: See also Coitus; Pregnancy; Reproduction
artificial, preserving spermatozoa for, 900
Preventing: See Contraception
receptivity of cervical mucus to spermatozoa, [Barton] 140—ab
INANITION: See Nutrition deficiency; Starvation
INCOME: See also Fees; Wages
raised for admission to health insurance, Netherlands, 712
Tax: See Tax
INCONTINENCE: See Urine
INDEX CATALOGUE of Surgeon General's Library, [Fishbein] ★103
INDEX MEDICUS, (financial difficulties), [Fishbein] ★388; (publication discontinued, 1899) ★474
Quarterly Cumulative: See American Medical Association
INDIAN Journal: See Journals
INDIANA Board of General Practice of Medicine, Inc., bylaws outline, 43; 942—OS
INDIANS, South American, medical protection of natives, Buenos Aires, 882
INDUSTRIAL ACCIDENTS, statistics for 1946, National Safety Council report, 564
INDUSTRIAL DERMATOSES, chromates cause, in aircraft workers, [Ellis] 1244—ab
citrus workers, [Seidmann] 1248—ab
cosmetic, in beauty parlor operator, 899
Japanese rifles cause, [Hinman] 132—ab
methylene dichloride (dichloromethane) and methyl chloride, 145
rubber manufacture, preventing, 1254
INDUSTRIAL DISEASES: See also Industrial Dermatoses
atabrine workers, "blue halos" of cornea in, [Mann] 1315—ab
clinic (1st), Swedish, 421
asbestosis, [Noro] 652—ab
diagnostic clinic, Pa., 1229
dynamite encephalosis, [Gerle] 142—ab
fluorine hazards, [Murray] 728—ab
fluorosis, [Green] 353—ab
hazards, bills in Congress, 406—OS
methylene dichloride (dichloromethane) and *methyl chloride*, 145
paper dust, 435
Pneumonoconiosis: See Pneumonoconiosis
radium poisoning, determine radium content of body to prevent, [Hess] 1305—ab
Q fever in U. S., [Topping & others] ★813; [Irons & Hooper] ★815; [Irons & others] ★819; [Cox & others] ★820
shoveler's disease, [Wetzel] 652—ab
Silicosis: See Pneumonoconiosis
thresher's disease, [Hoffmann] 652—ab
thresher's lung, [Tornell]] 504—ab
tuberculosis hazard in medical students, [Morris] 62—ab
INDUSTRIAL HAZARD: See Industrial Diseases
INDUSTRIAL HEALTH: See also Industrial Hygiene
advancement of, (Joint Committee report), 44
A. M. A. Council on: See American Medical Association
clinics, Racine, 877
conclave at Buffalo, 1165
conference at Williamsport, Pa., 956
employ nation's disabled, 1219—OS
Federal Employees Health division of U. S. P. H. S. established, 409
fibromyositis and referred pain, [Slobe] 803—ab
group insurance as it affects the physician, [Rees] ★613
hospitals, statistics, ★1066; ★1071
influenza B vaccination in factory, in [Norwood] 1307—ab
management-physician conferences, 706
maternity leave for federal workers, 185—OS
medicine, department, Mich., 792
medicine fellowship by Schenley Distillers at U. of Pittsburgh, 638
National Committee for Employment of Handicapped, 46—OS
physical examinations (pre-employment, occupational hazard, maintenance), [Poole] ★91
physician industrial management conferences, 706
pyogen, spray promoted as "cold cure," (Joint Council report), 694
tuberculosis survey, Chicago, 489
tuberculous patients reeducation and apprenticeship of, 263
200,000 Americans are potentially unemployable each year through disablement, 788
INDUSTRIAL HEALTH—Continued
urinary fluoride excretion in employees in alkylation plants, [Largent] 1309—ab
workers output and caloric intake, 322—E
workers (women), hemoglobin values in, [Davies] 728—ab
INDUSTRIAL HYGIENE: See also Industrial *Health*
service, Ohio, 491
INDUSTRIAL INJURIES: See Industrial Accidents
INDUSTRIAL POISONING: See Industrial Dermatoses; Industrial Diseases
INDUSTRIAL TRADE UNIONS, A. M. A. resolution on Bituminous Coal Mine Wage Agree*ment*, 35
health welfare programs in labor-management agreements, 327—OS; [Dickinson] ★1285
labor attempts to coerce nurses and physicians to, England, 121
mine operators term Lewis health and welfare fund "economic blackmail" 556—OS
sickness benefits plans, [Dickinson] ★1285
United Mine Workers Health Fund (A. M. A. Reference Committee report), 36; [Dickinson] ★1285
INEBRIETY: See Alcoholism
INFANTILE PARALYSIS: See Poliomyelitis
INFANTILISM, Renal: See Osteodystrophy, renal
INFANTS: See also Children; Infants, Newborn; Pediatrics; under names of specific diseases
"blue babies," arterial anastomosis for, 248—E
Death: See Infants, mortality
diarrhea epidemic, Mass., 489
diarrhea in breast fed, St. John's bread plus carrots for, [Rohmer] 729—ab
feeding, advertising proprietary foods 1915, *[Fishbein]* ★837
feeding, Beech-Nut products, 937
feeding (breast) by mother with brucellosis *during pregnancy*, 357
feeding (breast), failure of, 311
feeding (breast), nursing by syphilitic mother, *810*
feeding, cards available for physicians interested in, W. Va., 116
feeding, Gerber's Ready to Serve Barley Cereal, 937
feeding, intravenous alimentation, [Dodd] 893—ab
feeding, Libby's strained products, 937
methemoglobinemia from bismuth subnitrate used for diarrhea, [Wallace] ★1280
methemoglobinemia from nitrates in well water, [Faucett] 271—ab
mortality, fatal plastic bib, 121
mortality, posttransfusion death, 811
mortality rate decreased, U. S., 416
negroid characteristics in, 280
truncus arteriosus in, [Taussig] 1303—ab
Weight: See Infants, Newborn, weight
INFANTS, NEWBORN: See also Fetus
Birth Rate: See Vital Statistics
blood group tests, [Davidson] 345—C
circumcision of, (reply), [Rosenthal] 436
diarrhea epidemic, [Rubenstein] 1311—ab
diarrhea epidemic secondary to milk-borne epidemic, [Ensign] 271—ab
Erythroblastosis in: See Erythroblastosis, Fetal
footprints, permanence, [Walker] 1032—C
infectious mononucleosis in, acquired before birth, [Trincao] 142—ab
kernicterus in, [Vaughan] 203—ab
Nursery: See Hospitals, nursery
Ophthalmia in: See Conjunctivitis, infectious acute
protection; measures at Long Island College Hospital, [Weymuller & others] ★78
Test-tube: See Impregnation, artificial
tetanus from infected talc, fatal to 3, Australia, 1031
weight gain, relation to maternal weight gain, [Klein] 129—ab
INFECTION: See also Bacteria; Immunity; Pneumococcus; Staphylococcus; Streptococcus; Virus
air borne, control, [Perkins] 1304—ab
autoinfection (experimental), Russia, 713
factors in spreading in nursery for newborn, [Weymuller & others] ★78
Focal: See also Tonsils, infected
focal, Dr. Irons' presidential address on, 111—E
mixed, intrapleural penicillin for, [Callahan] 138—ab
of Blood: See Meningococcemia
Postoperative: See Infection, surgical
Prevention: See Sterilization, Bacterial
Pyogenic: See Abscess
surgical, bacitracin locally, [Meleney & Johnson] ★675
surgical, penicillin for, [Meleney] 426—ab
Wound: See Wounds, infected
INFECTIOUS Hepatitis: See Liver inflammation
infectious diseases in pregnancy; defects in child [Swan] 1316—ab
INFERTILITY: See Sterility

INFLAMMATION: See under names of specific diseases and organs as Bladder, Gallbladder; Pancreas; Stomatitis, Tongue
INFLUENZA, A and B, where obtain antiserum to measure antibodies in patient's serum, 810
  B epidemic in Pacific area, 1945, [Milstone] 725—ab
  B epidemic, vaccination in industrial plant, [Norwood] 1307—ab
  B in 1945-1946, Great Britain, [Dudgeon] 274—ab
  B incidence, effect of vaccination on, 940—E
  B, specific and nonspecific reactions to, [Burnet] 140—ab
  epidemic, human, protective antibodies, 882
  immunization 161—ab
  immunization, agglutination inhibition test in, [Florman] 128—ab
  immunization at Duke U, [Broadbent] 204—ab
  in Illinois, mild type, 875
  in Sweden, 564
  incidence, U. S, 1025
  index, [Schwartz] 350—ab
  meningitis related to bacterial type, outcome, [Zinnemann] 894—ab
  meningitis, streptomycin for, [Hoyne] 721—ab
  of Parrots: See Psittacosis
  treatment, whisky, in 1920, [Fishbein] *924
  vaccine, fatal allergic reaction, [Curphey] *1062
  vaccine, safe to use in tuberculosis patients? 1174
  vaccine, Sweden, 421
  vaccines, comparative prophylactic value of different ones, 146
  viruses, toxicity [Henle] 648—ab
INFRA-RED RAYS, Eastman Radiant Energy Lamps, 1008
INFUSION: See Injections, intravenous
INGALS, E F, first A. M A home at 535, [Fishbein] *608
INHALATION: See Carbon Dioxide, Steam
  of Dust See Pneumonoconiosis
INJECTIONS. See also under names of specific substances
  Intravenous: See also Anesthesia, pentothal; Liver extract; Blood Transfusion
  intravenous alimentation in infants, [Dodd] 893—ab
  intravenous infusion in dehydration, [Borst] 968—ab
  Spinal See Anesthesia, spinal
INJURIES See Accidents; Burns; Trauma; Wounds; under specific organ or region as Brain, Eyes, Liver, Spinal Cord
  Industrial. See Industrial Accidents
  War See World War II, casualties
INOCULATION. See Immunization
INSANE ASYLUMS. See Hospitals, psychiatric, Hospitals, state
INSANITY See Dementia Paralytica; Dementia Precox; Mental Disorders; etc ; Medicolegal Abstracts at end of letter M
INSECTICIDES, DDT: See DDT
  spray, efficacy in aircraft, [Gainham] 140—ab
INSECTS See also Bees; Flies, Lice; Mosquitoes
  survive flight into ionosphere by rocket, 874—OS
INSEMINATION. See Impregnation
  Prevention of: See Contraception
INSIGNIA See also Emblems
  of A M A adopted in 1910, [Fishbein] *763
INSTITUTE See also Cancer, National Institute, Societies and Other Organizations at end of letter S
  for Study of Rheumatic Fever at Northwestern U, 791
  of Medicine of Chicago: See Chicago
  of Rehabilitation, campaign to raise 2 million, 50
INSTITUTIONS See Hospitals, Schools; Schools, Medical
INSTRUCTION. See Education; Education, Medical, Schools; University
INSTRUMENTS: See Apparatus; Medical Supplies
  Sterilization of: See Sterilization, Bacterial
INSULAR Tissue (Islands of Langerhans): See Pancreas
INSULIN, discoverer, Dr. Best awarded honorary degree, Netherlands, 712
  discoverer, liberty ship named for Dr. Banting, 1294
  globin insulin with zinc, N.N.R, (Squibb) 543
  Hyperinsulinism: See Pancreas, secretion
  pharmacoradiographic agent, 420
  resistance, extreme, [McGavack] 891—ab
  shock therapy plus electroshock, in schizophrenia, [Polatin] 726—ab
  test for intact nerve fibers after vagotomy, [Hollander] 1307—ab
  Treatment: See Diabetes Mellitus
INSURANCE: See also Medicolegal Abstracts at end of letter M
  A M A resolution on freedom of choice of physician in 1917, [Fishbein] *841
  compulsory, dental benefits under, England, [Josselyn] 125—C
INSURANCE—Continued
  fundamental requirements, 481—E; [Dickinson] *483
  group, as it affects physician, [Rees] *613
  Hospitalization: See Hospitals, expense insurance
  Life. See also Metropolitan Life Insurance Co.
  Life Insurance Medical Research Fund awards for research, 957
  Medical Society Medical Service Plan: See Medical Service Plans
  Old Age See Social Security
  sickness benefits, trade union plans for, [Dickinson] *1285
  sickness (compulsory), and the A M. A., [Fishbein] (representative sent to Europe to study, 1913) *770; (in 1916) *837; (changing view, 1920-1924) *923; (condemned) *924
  sickness, income raised for admission, Netherlands, 712
  Sickness, National Health Service Act, Beveridge Plan See National Health Service Act
  sickness (nationwide), administration revives demand for, 184—OS, 556—OS
  sickness, new fees for Dutch doctors, 1300
  sickness, Wagner-Murray-Dingell Bill: See Wagner
  social, A M A. Council on Health and Public Instruction committee report, [Fishbein] *836, *839; *840; *841, *844; *846; *847, *923
INTELLIGENCE tests, level of intelligence fluctuates with size of family, 961
INTER-AMERICAN. See also Latin America; Pan American, South America
  Congress of Cardiology (2nd), 639
  Congress on Brucellosis (1st), 118; (proceedings) 798
INTERCOURSE, Sexual: See Coitus
INTERIM Commission. See World Health Organization
INTERN: See Interns and Internships
INTERNAL MEDICINE, California Society of, organized, 636
INTERNAL SECRETION, Glands of: See Endocrine Glands
INTERNATIONAL: See also United Nations; list of Societies at end of letter S
  College of Surgeons purchases headquarters, 1025
  Congress for Orthopedic Surgery and Traumatology, Sept 1948, 1300
  Congress of Military Medicine, Berne, 262; 1231
  Congress on Legal Medicine, 564
  epidemiologic reporting service by World Health Organization, 258
  Health Congress, Puerto Rico, 1230
  Medical Congress, 878
  Medical Congress in 1887, [Fishbein] *312; *313; *690
  Society of Surgery, London, 639; 961
INTERNMENT Camps: See World War II, prisoners
INTERNS and INTERNSHIPS: See also Residents and Residencies
  appointment, *1082
  approved by A M. A., (additional list of) *1078, (number) *1081
  Association of, 337
  living quarters in Japan, 196
  9-9-9 program, A S T P, 874—OS
  opportunities, statement by Dr. Johnson (Joint Committee report), 41
  placement plan (uniform), 267
  2 year, required at Cook County, 791
INTERVERTEBRAL Disk: See Spine
INTESTINES See also Appendix; Cecum; Colon, Duodenum; Feces; Gastrointestinal Tract; Peritoneum; Rectum; etc
  bacteria, alteration of flora, 970
  bacteria, urea to differentiate Proteus and paracolon cultures, [Christensen] 136—ab
  cancer, adenomas in relation to, [Helwig] 1313—ab
  Disease See Appendicitis; Colitis; Diarrhea; Typhoid
  diverticulosis cause of intestinovesical fistula, [Barnes & Hill] *456
  Fistula: See Fistula
  Hernia See Hernia
  infections, streptomycin for [Pulaski] 571—ab
  inflammation, regional enteritis in pregnancy, [Williams] 966—ab
  Intussusception See Intussusception
  mucosa extract, enterogastrone in peptic ulcer, [Greengard] 1307—ab
  obstruction, penicillin for, [Blain] 134—ab
  Parasites: See Ancylostomiasis, Ascariasis
  strangulation and volvulus, early diagnosis; management, [Evans & Bigger] *513
  tumors, adenomas, relation to cancer, [Helwig] 1313—ab
  tumors of dysenteric origin, [Silverman & Leslie] *994
INTOCOSTRIN. See Curare
INTOXICATION: See Alcoholism
INTRAVENOUS Anesthesia: See Anesthesia, pentothal sodium
  Clotting: See Phlebothrombosis
  Injection: See Injections
INTUBATION See Duodenal Tube; Endotracheal Tube
INTUSSUSCEPTION of appendix, [Miln] 208—ab
  retrograde, [Thorek & Lorimer] *21
INVESTIGATION, Investigators; See Research
INVESTMENTS, doctor reviews his portfolio, [Smith] *27
IODINE, endemic goiter due to lack of? [Greenwald] 891—ab
  radioactive, therapy in hyperthyroidism, [Hertz] 726—ab
IODIZED OIL, intrabronchial instillation, [Kooperstein] 499—ab
  intrauterine injection, venous intravasation after, [Bloomfield] 805—ab
IODIZED SALT See Salt
ION TRANSFER, ionization measurements with bone chambers, [Stenstrom] 887—ab
IONOSPHERE, insects survive flight by rocket into, 874—OS
IOWA, State University of See State University
IRISH (Henry E) Lecture: See Lectures
IRON, harmful effects of prolonged use of ferrous sulfate and ferrous gluconate, 655
  Nuxated Iron, 883—BI
  use to avoid allergy to liver extract, [Sullivan & Broun] *178
IRONS, ERNEST E, presidential address on focal infection, 111—E
IRRADIATION See Radiation
IRRIGATION: See Bladder, Peritoneum; Stomach lavage
[illegible] See Pancreas
[illegible] eridine
[illegible] for sterilizing metal instruments, 734
ITALY, American medical books lacking in, 644
  demerol in, [Musella] 198—C
ITCHING. See Eczema; Pruritus
IVY, A. C, A M A Judicial Council on report on German atrocities, 35
IVY, Poison: See Rhus

J

J. A M A: See American Medical Association
JACOBI, ABRAHAM, valedictory address, 1912, [Fishbein] *767; *768
JACOBI Fellowship. See Fellowship
JAPAN, at War See World War II
  contact dermatitis from Japanese rifles, [Hinman] 132—ab
  food needs, survey, 559
  406th medical general laboratory in Tokyo, 186
  health conditions, report by Gen. MacArthur, 252
  medical education reform in, 196
  Population Policy Commission adopts program of eugenics, 185—OS
JAPANESE B Virus See Encephalitis
  River Fever: See Tsutsugamushi Disease
JASMINE Root: See Gelsemium
JAUNDICE, after penicillin treatment, [Hughes] 352—ab
  complicates typhoid in child, [Sepulveda de Borquez] 1247—ab
  Epidemic See Liver inflammation
  hemolytic (familial chronic) complications, [Aarseth] 968—ab
  hepatocellular (primary), treatment, [Snell] *1179
  of newborn kernicterus in erythroblastosis fetalis, [Vaughan] 203—ab
  spirochetal, Weil's disease, [Robertson] 502—ab
  treatment, management of patient; surgical indications, [Snell] *1175 (diet) *1178
JAWS See also Teeth
  dislocation (recurrent), 74
  phossy, extermination, 643
JAYNE'S Vermifuge, 883—BI
JEFFRIES Award: See Prizes
JEWS See Palestine
JOBS See Industrial Health
JOHNSON, VICTOR, appointment to Mayo Foundation, 327—OS
JOINT Committee for Coordination of Medical Activities: See American Medical Association Joint Committee
JOINTS See also Arthritis, under names of specific joints as Knee, Shoulder; Wrist
  Degenerative Disease See Osteoarthritis
  penicillin injected into, [Tucker] 892—ab
  Surgery See Arthroplasty
JONES, PHILIP MILLS, [Fishbein] (proposed Drug Bureau: cartoon) *683, (proposed reference committee) *688, (A. M. A. memorandum on death of, 1917) *840
JOURNALS See also Articles; Library; Newspapers
  abstract, from England, Netherlands and the U S, 480—E
  abstract, series by Excerpta Medica, Inc, 416
  American Journal of Tropical Medicine, editor resigns, 794
  American Medical Journalist cartoons against A M A Council, [Fishbein] *681; *683
  Annals of Western Medicine and Surgery, new journal, 1227
  Archives published by A M A See American Medical Association, journals (special)

JOURNALS—Continued
  Archivos de Neuro-Psiquiatria, new journal, 1295
  British Journal of Nutrition to replace Proceedings 880
  British Medical Bulletin symposium on background to chemotherapy, 478—E
  British Medical Journal (growth of 1880), [Fishbein] *236, *237, (coal crisis affects [illegible]) 698—E, 880
  [illegible] A M A to [illegible] *766
  [illegible] al Association [illegible] new journal, [illegible] 416
  Journal of the A M A See American Medical Association
  Ladies Home Journal iodized salt and goiter, 620—E
  Lancet not published during coal crisis 880
  Medical Annals of District of Columbia, editor consults his readers [Wiprud] 621
  medical ethics and P Maxwell Foshay on, 1900 [Fishbein] *531
  medical, needed in Netherlands [Taylor] 315—C [Kouwer] 715—C, 878
  medical (privately owned), enemies of A M A [Fishbein] *686
  microfilm service of Army Medical Library, 789
  New England Journal of Medicine (editorial against William Brady, M D) 249—E, (editor consults his readers) [Wiprud] 624—ab [Nye] 625—ab
  New York Medical Record attacks on A M A [Fishbein] *685, *686
  Nutrition Bulletin new journal 495
  Occupational Therapy and Rehabilitation, new sponsor, 257
  of A M A See American Medical Association
  of public health proposed to be published by A M A, 1912, [Fishbein] *762, *766
  Ohio Historical Quarterly, [Forman] 625—ab
  Ohio State Journal of Medicine editor consults his readers [Forman] 625—ab
  Philippine Journal of Surgery, new journal, 1231
  Postgraduate Medicine new journal, 1025
  Revista de Nutricion 118
  Science editor dies, W L Valentine, 1230
  state editorial condition and advertising, [Fishbein, Kosmak] 626—ab
  state, history of, [Fishbein] *690
  Wisconsin Medical Journal 1947 blue book, 956
JUDD Lecture See Lectures
JULY Fourth See Fourth of July
JUNGLE rot causes false positive syphilis test, 73
JURISPRUDENCE MEDICAL See Medical Jurisprudence

K

KR, cancerolytic substance of Trypanosoma crusi, 111—E, 122, [Gross] 800—C; [Klyuvea] 1038—ab
KAHN TEST for syphilis in healthy men, [Wolman] 128—ab
KALA AZAR See Leishmaniasis
KALSEOM Tablets, 883—BI
KAPPA Sigma Fraternity See Prizes
KEELEY Cure of alcoholism [Fishbein] *386; *387
KEEN, W W, campaign for animal experimentation, 1897 [Fishbein] *470
  presidential address in 1900 [Fishbein] *534
KELLER HELEN British National Institute for Blind praises 261
KELOID hernia of anterior tibial muscle (reply), [McKeever] 214
KENYA Colony, immunizations for, 434
KERASIN, staining histochemical method in Gaucher s disease, 496
KERATITIS (delayed) from mustard gas possible? 145
  superficial punctate, human globulin for, 508
KERATOCONJUNCTIVITIS epidemic, use of human globulin for, 508
KERNICTERUS in erythroblastosis fetalis, [Vaughan] 203—ab
KIDNEYS See also Urinary System
  decapsulation for anuria, [Reid] 503—ab
  diagnosis arteriography in, [Wagner] 965—ab
  disease, in early syphilis [Thomas] 888—ab
  disease lower nephron [Lucke] 572—ab
  excision for hypertension with unilateral renal disease, [Ratliff & others] *296
  extract renin in cardiac failure, [Merrill] 424—ab
  extract renin in essential hypertension, [Taquini] 61—ab
  Glomeruli See Nephritis, glomerular
  glycosuria, 899
  Inflammation See Nephritis
  insufficiency peritoneal irrigation in acute failure, [Fine] 426—ab, [Goodyear & Beard] *1208
  necrotizing papillitis, [Robbins] 1035—ab
  osteodystrophy, [Norman & others] *771
KIDNEYS—Continued
  pathologic changes from streptomycin, [Mushett] 1242—ab
  Pelvis See Pyelography, Pyelonephritis
  pressor substance in blood in hypertension, [Kreutzfeldt] 431—ab
  regulation of acid base balance, reabsorption and excretion of bicarbonate 777—E
  rupture (spontaneous), [Beard] 139—ab
  Surgery See Kidneys decapsulation, Kidneys excision
  tetrathionate therapy of thromboangiitis obliterans injures (Council report), 693
  tuberculosis, relation to primary tuberculosis, [Ustvedt] 1318—ab
  tumors hypernephroma (bilateral), [Senger] 1311—ab
KILGORE-Magnuson bill, planning for health, 180—L
KILLED in Action See World War II Heroes
KING L B fraudulent salesman, 1230
KIRK NORMAN T, honorary degree to 789
KIRSCHNER electrocoagulation of gasserian ganglion 577
KITCHEN, danger in 1295
  Utensils See Cooking and Eating Utensils
  hospital, danger from DDT to control flies in, 73
KLEBSIELLA granulomatis, urinary infection, streptomycin for, [Adcock & Plumb] *579
  pneumoniae (Friedlander's bacillus) meningitis streptomycin for, [Tartakoff] 351—ab
KNEE, prostheses internal control 435
  wounds (penetrating), management, [Hampton] 349—ab
KOBER Lecture See Lectures
  Medal See Prizes
KOROMEX Cream and Applicator, N N R, (Holland-Rantos), 321
KRASHENINNIKOV, applied Besredka's theory in cancer treatment, 111—E, [Gross] 800—C
KRETSCHMER Lecture See Lectures

L

LABELS warnings on prescribed drugs, (Council discusses), 850
LABOR See also Abortion, Cesarean Section; Obstetrics, Pregnancy, Puerperium
  accelerating, new method with thiamine hydrochloride, Russia, 122
  Anesthesia in See Anesthesia
  Complications See Eclampsia
  ergonovine and posterior pituitary injection compatible in same syringe? 1044
  prolonged, especially postpartum hemorrhage, [Odell & others] *735
  prolonged, posterior pituitary injection in, [Reid]] 425—ab
  South African Negro or Bantu as parturient, [Heyns] 1037—ab
  vitamin K given routinely before delivery, 970
LABOR, MANUAL See Industrial Health; Work
LABOR RELATIONS See Industrial Health, Medicolegal Abstracts at end of letter M
LABOR UNIONS See Industrial Trade Unions
LABORATORIES, Blood Group Reference, England 566
  clinical at Rio Piedras, 1230
  commerical, advertising of, [Fishbein] *926
  406th medical general, in Tokyo, 186
  geriatrics research N Y, 116, 414
  investigation in diagnosing virus infections, Chadwick lecture by S P Bedson 1299
  Rh Factor set up Washington D C, 184—OS
  specialists, conference, 1018
  Technician See also Technologists, medical
  technician A M A adopts new name, medical technologist, *1150
  to make vaccines, Puerto Rico, 336
LACQUER, contact dermatitis from Japanese rifles [Hinman] 132—ab
LACTATION See Milk, human
LACTOBACILLUS, alteration of intestinal flora, 970
  Casei Factor (synthetic) See Acid, folic
LACTOFLAVIN See Riboflavin
LACTOSE with fats, nutritive value, [Ershoff] 1304—ab
LADIES HOME JOURNAL See Journals
LAENNEC S Cirrhosis See Liver, cirrhosis
LAMBERT, ALEXANDER, A M A Judicial Council report on social insurance, [Fishbein] *836
LAMBLIASIS See Giardiasis
LAMINITIS (founder) in horses, bear resemblance to gout? 434
LANATOSIDE C for auricular flutter, [Tandowsky] 424—ab
LANCET See Journals
LANGERHANS, Islands of See Pancreas
LANGUAGE See English, Terminology
LARYNGOLOGY See Otolaryngology, Otorhinolaryngology
LARYNGOTRACHEOBRONCHITIS, [Morgan] 1242—ab
LARYNX See also Voice
  excision organization of those who have undergone, where obtain artificial voice aids? 146
LASKER AWARD See Prizes
LATIN-AMERICA See also Inter-American; Pan American, South America
LATIN AMERICA—Continued
  gastroenterologists and nutritionists meet, 343
  health activities in, 118
  medical news from 258, 714, 882
LAVAGE See Irrigation (cross reference), Stomach
LAW See Attorneys
  in relation to Medicine See Medical Jurisprudence
LAWS AND LEGISLATION A M A Bureau of See American Medical Association
  A M A Committee on 1905 1909, [Fishbein] *681
  bill to end 'fly by night' training schools for practical nurses, 482—OS
  Carlson (A J) recommends scientist initiate counter antivivisection bills 51
  federal and state weekly summary, 185; 251, 328, 406, 484 557 632, 700, 785, 872 918 1017, 1161 1219 1286
  federal what s ahead for 80th Congress? [Miller] 555—ab
  Food Drug and Cosmetic Act See Food
  Fulbright Taft Bill See Taft
  G I Bill of Rights See G I Bill of Rights
  Harrison Narcotic Law See Harrison
  Hill-Burton Act See Hill Burton Act
  law authorizing practice of naturopathy repealed, Tenn 415
  Lemke Antivivisection Bill See Lemke
  state and state medical society, [Barker] 549—ab
  Taft-Smith Ball Donnell Medical Care Bill: See Taft
  U S Army Medical Department, proposed legislation 873—OS
  Violation of See Medical Jurisprudence, Medicolegal Abstracts at end of letter M
  Wagner-Murray Dingell Bill See Wagner
  water pollution control bill, 1219—OS
LAWSUITS See Medical Jurisprudence
LAWYERS See Attorneys
LAXATIVES See Cathartics
LEAD poisoning from bread, 644
  tetraethyl poisoning, [Cassells] 352—ab
LEAGUE of Nations See United Nations
LEBEDENKO, VLADIMIR V, death, 52
LECTURES See also under Book Notices at end of letter B
  Alpha Omega Alpha, 563
  Bacon, 1292
  Barnard Hospital [Warren] *462
  Biggs (Herman M) Memorial, 793
  Boston City Hospital, 413
  Chadwick diagnosis of virus infections, 1299
  Crane Memorial 792
  Cutter, 1023
  Davis (D J) 954
  De Lamar, 876
  Dock (George), 791
  Eastman Memorial, 1164
  Flexner, 415
  Gifford (Sanford R) Memorial 115
  Guerriero (Charles P) Memorial, 877
  Harvey, (4th) 116, (5th) 793
  Hektoen (Ludvig), 189 561
  Irish (Henry E) Lectureship established, 791
  Judd (E Starr), 792
  Kober, (George Martin), 1015—OS, 1159—OS
  Kretschmer (Edwin R) Memorial (6th), 875
  McArthur (Lewis Linn), 561
  Maimonides 256
  Martland (Harrison S), 1164
  Miller (Adam M), 1024
  Phi Delta Epsilon, 1293
  Proctor (Francis I) (1st), 255
  Rothschild, 414
  Smith (Reginald Knight), 560
  Sommer (Ernest A) Memorial, 955
  Surman (Arnold C) Memorial, 956
  U S Naval Medical Center series of great lecturers, Bethesda, 488
  Wilder (William Hamlin) Memorial, 875
  Zeit (Frederick Robert) Memorial, 1227
LEG See Legs
LEGAL MEDICINE See Laws and Legislation, Medical Jurisprudence, Medicolegal Abstracts at end of letter M
  A M A Bureau of See American Medical Association
LEGION of Merit See World War II, Heroes
LEGISLATION See Laws and Legislation
LEGS See also Extremities, Femur, Foot, Knee
  Amputation of See Amputation
  arteriosclerotic, treatment, 1320
  Artificial See Limbs, artificial
  blood pressure in [Stewart] 424—ab
  crossing causes peroneal palsy, [Nagler & Rangell] *755
  trauma, refrigeration in, [Pernworth] 1308—ab
  Ulcers See Ulcers, Varicose Veins
LEIOMYOMA, esophageal, successful resection, [Schafer & Kittle] *1202
LEISHMANIASIS cutaneous culture method in, [Dostrovsky] 269—ab
  syphilis serodiagnostic false positive reactions in, 73
  treatment, antimoniate of N methyl glucamine, also diamidine, 420

LEMKE Antivivisection Bill, 184—OS; 327—OS; 631—OS; 948—OS
LEMON juice dissolves tooth substance, 1218—E
LENIN, NIKOLAI, conservation of his body, 1235
LENS, CRYSTALLINE, Opacity: See Cataract
LENSES, Contact: See Glasses
LEPROSY, treatment, diasone, [Muir] 967—ab
  treatment, promin, [Wharton] 967—ab
  treatment, promin and promizole, 46—OS
LEPTOSPIROSIS: See also Jaundice, spirochetal
  canicola fever, [Rosenbaum] 571—ab
  canicola, penicillin for [Baber] 140—ab
LEPTOTRICHOSIS, Parinaud's conjunctivitis, 357
LERICHE, Professor, personal, 960
LETTERS: See Mail
LEUKEMIA, mortality from, 547—E
  priapism in, dicumarol contraindicated, 73
LEUKOCYTES: See also Eosinophilia; Mononucleosis, Infectious
  Count: See also Agranulocytosis, Acute; Leukemia
  count in multiple myeloma, [Bayrd & Heck] ★151
  formula in liver cirrhoses, [de Graciansky] 503—ab
LEUKOTOMY: See Brain surgery
LEVY Foundation: See Foundations
LIBBY'S strained products for infants, 937
LIBEL suits against A.M.A., 1917, [Fishbein] ★836; ★840; ★843
LIBIDO, vitamin B *complex affect?* 1253
LIBRARIANS: See Library; Medical Record Librarians
LIBRARY: See also Books; Journals; Newspapers
  Klebs, of medical history to Yale, 334
  Netherlands, medical literature needed for, [Taylor] 345—C; [Kouwer] 715—C; 878
  Surgeon General's, INDEX CATALOGUE of, [Fishbein] ★103
  Tulane University, Rudolph Matas gives 50 year files to, 561
  U. S. Army Medical, 186; (in 1885) [Fishbein] ★311; (new director: Col. McNinch) 329; (microfilm service available to physicians) 789; (Association of Honorary Consultants, Inc.) 1018; (acquires CHINESE GOLDEN MIRROR OF MEDICINE) 1018
  war devastated, book center for, 878
LICE, Infestation: See Pediculosis
  louse borne relapsing fever, penicillin for [Ingraham] 207—ab
  louse borne typhus, ear symptoms, [Merei] 1318—ab
LICENSURE: See also State Board
  A.M.A. Annual Congress on (program) 34—E; 59; (proceedings) 856—OS
  diploma mill scandal, 1924, [Fishbein] ★932; ★933
  Indiana Supreme Court upholds revocation of license, 413
  Kern County Hospital investigation, Calif., 1291
  model hospital licensing law, 946—OS
  of returning medical officers, (Joint Committee report), 43
  temporary permits to practice, Fla., 1022
LICHEN (botanical), Ramalina reticulata, antibiotic from [Marshak] 1245—ab
LICHEN (dermatologic) planus (atypical), [Wilson] 200—ab
LIDS: See Eyelids
LIECHTI, ADOLF, death, 52
LIFE: See also Death
  Duration: See Old Age
  Insurance: See Insurance; Metropolitan Life Insurance Co.
  "Long Life and a Merry One," CBS radio presentation reviewed, 1161—OS
LIGATURE: See Suture
LIGHT, sensitivity, to, benadryl for, [Tyson] 137—ab
LIMBS: See Extremities
  Phantom: See Amputation
LIMBS, ARTIFICIAL: See also Amputation
  best artificial leg for midthigh amputation? 656
  internal control knee prostheses, 435
  manufacture, [Ritter] 1237—C
  manufacturers, convictions against reversed by court, 405—OS
  model of new hand, 408
  production of more efficient, 482—OS
  suction sockets for, 703
LINS, A. E., death, 567
LIPOIDOSES, Niemann-Pick disease within group of, [Pfandler] 1247—ab
LIPOMA of cauda equina, [Furtado] 208—ab
  of corpus callosum, [Amyot] 502—ab
LIQUOR, Alcoholic: See Alcohol
LITERARY Guild: See Physicians avocations
LITERATURE: See Articles; Books; Journals; Library; Newspapers; Terminology; Writing
LITHIASIS: See Calculi (cross reference)
LITHIUM antimony thiomalate treatment in filariasis, [Brown] 268—ab
  antimony thiomalate treatment in tuberculosis, [Brown] 268—ab
LIVER: See also Bile Ducts; Biliary Tract
  abscess, emetine treatment in pyogenic infections, [Melchior] 563—ab
LIVER—Continued
  abscess, pyogenic (multiple), penicillin cures, [Michel & Wirth] ★395
  amebiasis complications 496
  amebic hepatitis, pleurisy from, (Carruthers] 1246—ab
  atrophy (acute yellow), 1156—E
  biopsy (needle) [Davis] 129—ab
  cirrhosis (ascitic), transfuse ascitic liquid in, [Acevedo Olvera] 1317—ab
  cirrhosis, blood bilirubin to differentiate from peptic ulcer, [Navarro] 351—ab
  cirrhosis, intravenous liver extract therapy, [Labby & others] ★1181
  cirrhosis (Laennec's), dietary treatment, [Patek] 427—ab
  cirrhosis, leukocyte formula in [de Graciansky] 503—ab
  damage, sucrose tolerance tests, [O'Brien & Higgins] 197—C
  Disease: See also Jaundice
  disease, dietetic factors, [Witts] 1315—ab
  disease, methylxanthines effect on, prothrombin activity [Rieben] 69—ab
  dysfunction, chronic subclinical impairment, early diagnosis; treatment, [Mateer & others] ★909
  Extract: See Liver preparations
  function, glucuronate excretion test [Snapper] 424—ab
  function test, colloidal gold, Borowskaja method, 734
  function tests, evaluated, [Mateer & others] ★909
  function tests in intravenous liver extract therapy of cirrhosis, [Labby & others] ★1184
  function tests in obstructive and hepatocellular jaundice, [Snell] ★1176
  glycogen disease (familial), [Abramson] 570—ab
  hypertrophy, hepatomegaly and portal obstruction in diabetic child, 279
  inflammation complicating typhoid in child, [Sepulveda de Borquez] 1247—ab
  inflammation (epidemic), galactose tolerance in [Schneiderbaur] 1172—ab
  inflammation (infectious), [Moloney] 726—ab
  inflammation (infectious), blood proteins in, [Armas-Cruz] 1247—ab; [Martin] 1315—ab
  inflammation (infectious), etiology [Pendl] 967—ab
  inflammation (infectious), fat in diet during recovery, [Hoagland] 490—ab
  inflammation (infectious), immunity in, [Havens] 501—ab
  inflammation (infectious), laboratory aids in, [Neefe] 890—ab
  inflammation (infectious) may lead to acute yellow *atrophy*, 1157—E
  inflammation (infectious), neurologic manifestations [Weinstein] 887—ab
  inflammation, spread of poliomyelitis and, in Egypt [Van Rooyen] 428—ab
  injury, prevention and treatment, methionine in (Council report), 107
  Necrosis: See Liver atrophy (acute yellow)
  pathologic changes from streptomycin, [Mushett] 1242—ab
  preparations, allergy to extract, [Sullivan & Broun] ★178
  preparations, extract in probable gastrointestinal lesion, 278
  preparations, extract intravenously in cirrhosis [Labby & others] ★1181
  Riedel's lobe [Gloyne] 426—ab
LIVESTOCK: See Animals
LIVING: See Life
  Quarters: See Home; Housing
LOA LOA: See Filariasis
LOANS, Students: See Students, Medical
LOBECTOMY: See Lungs surgery
LOBOTOMY: See Brain surgery
LOCKJAW: See Tetanus
LOCOMOTOR Ataxia: See Tabes Dorsalis
LOEFFLER'S syndrome, 325—E; 776—E
LOEWI, humoral transmission of vagal and accelerator effects, 761—ab
LONGEVITY: See Old Age; Physicians, veteran
LOST Chord Society, organization of laryngectomized patients, 146
LOUISIANA Physicians Service, Inc., 46—OS; (*seal of acceptance to*) 112—OS
LOUSE: See Lice
LUCITE, use in extrapleural pneumonolysis, [McCain] 1312—ab
LUMBAR Puncture: See Spinal Puncture
LUMBOSACRAL Region: See Pilonidal Sinus
LUMINAL: See Phenobarbital
LUNGS: See also Bronchus; Pleura; Respiratory System
  acariasis or tropical eosinophilia, [Hall] 967—ab
  amyloidosis (primary) [Dirkse] 499—ab
  asbestos and aluminum effect on, in rabbits [King] 208—ab
  calcification (disseminated), [High] 1245—ab
  cancer (apical) and Pancoast tumor of superior pulmonary sulcus, [Wicht] 254—ab
  cancer (bronchiogenic) [Lindskog] 132—ab
  Collapse: See also Pneumothorax; Pneumothorax, Artificial; Tuberculosis of Lung, *artificial pneumothorax in*
LUNGS—Continued
  collapse, atelectasis complicating lobectomy, [Gray] 651—ab
  collapse, atelectasis in upper urinary tract operations [Faulconer] 647—ab
  Disease: See also Pneumonoconiosis; and other subheads under lungs
  disease, statistical results of screening process, [Kollbrunner] 967—ab
  edema, treatment with concentrated plasma, [Cleland] 352—ab
  Embolism of Pulmonary Arteries: See Embolism, pulmonary
  Hemorrhage: See Hemoptysis
  Hyperventilation: See Respiration
  Infection: See Influenza; Pneumonia; Tuberculosis of Lung
  injuries, nonpenetrating, pneumonia after, penicillin or sulfadiazine, atropine and papverine to prevent [Phillips] ★161
  lesions in skeletal tuberculosis, [Mann] 502—ab
  pressure (intravascular), susceptibility to tuberculosis depends on, [Röder] 1237—C
  roentgen study in Q fever, [Irons & Hooper] ★817
  secretion (accumulated), endotracheal intubation for, [Foregger] ★1200
  Superior Pulmonary Sulcus Tumor: See Thorax tumors
  surgery, lobectomy and pneumonectomy in tuberculosis, [Sweet] 1310—ab
  surgery, lobectomy, atelectasis complicating, [Gray] 651—ab
  surgery, lobectomy brings low mortality, 1284—E
  surgery, pneumonolysis (extrapleural), use of lucite, [McCain] 1312—ab
  surgery, pneumonolysis, results, [Branday] 888—ab
  surgery, resection, pneumonectomy, lobectomy in bronchial adenoma, [Tricerri] 895 ab
  thresher's, [Tornell] 504—ab
  transitory infiltration with eosinophilia (Loeffler's syndrome), 325—E; 776—E
  Tuberculosis of: See Tuberculosis of Lung
  Ventilation: See Respiration
LUPUS erythematosus, treatment; causes, 213
  Vulgaris: See Tuburculosis luposa
LYDSTON, G. FRANK, battle with A. M. A. [Fishbein] ★764; ★769; ★843
LYMPHATIC SYSTEM: See also Mononucleosis, Infectious
  diagnostic value of preauricular adenopathy, [Thygeson] ★437
LYMPHOCYTES: See Choriomeningitis
LYMPHOGRANULOMA Benignum: See Sarcoidosis
LYMPHOGRANULOMATOSIS: See *Hodgkin's* Disease
LYMPHOID TISSUE: See Nasopharynx

M

MBP (brucella antigen), Castaneda vaccine for undulant fever, 656
McARTHUR, DOUGLAS, reports on health conditions in Japan, 252
McARTHUR Lecture: See Lectures
MACATEE, HENRY C., A. M. A. stand against insurance legislation explained by, 482
McCLARAN, JAMES W., *bronze plaque unveiled*, 637
McCORMACK, J. N., A. M. A. organizer, [Fishbein] (1901) ★537; (1907) ★682; ★683; ★689; (death, 1922) ★928
McKINLEY, WILLIAM, at A. M. A. semicentennial meeting, 1897, [Fishbein] ★470
  death, [Fishbein] ★607
McMURTRY, L. S., tribute to A. M. A. Board of Trustees, [Fishbein] ★684
McNINCH, J. S., new director of Army Medical Library, 329
MACU Brand Papaya Concentrate, 264—BI
MADAME, Trade names beginning with "Madame": See under surname
MAGAZINES: See Periodicals
MAGNESIUM hydroxide treatment of peptic ulcer, [Jankelson] 1240—ab
  Silicate: See Talc
MAGUIRE, ALEXANDER, death of, extermina*tion of "phossy jaw,"* 643
MAICO Atomeer hearing aid, 542
MAIL, soldiers' Christmas, lost at sea, 486
MAIMONIDES Lecture: See Lectures
MALARIA, control activities, USPHS annual report, 702
  falciparum acute, pathology, [Spitz] 573—ab
  hemoglobinuria (*blackwater fever*) in, transfusion for, [Julliard] 729—ab
  immunity to vivax, [Boyd] 135—ab
  mortality and morbidity, [Faust] 201—ab
  relapses, reduction, [Winckel] 431—ab
  syphilis, false positive tests in, 73; [Rein & Kent] ★1001
  therapeutic, neurosyphilis on decline 25 years after beginning of, 482—OS
  therapeutic, plus penicillin in neurosyphilis, [Rose & Solomon] ★6
  transmission by transfusion; danger, [Coggeshall] 1238—C
  treatment, melarsen oxide, [Payne] 893—ab

MALARIA—*Continued*
treatment quinacrine concentrations in plasma, [Becker] 202—ab
treatment, quinacrine hydrochloride, dermatosis from, [Peterkin] 727—ab
treatment, quinacrine suppression, individual failures, [Bang] 132—ab
treatment, quinine, A M A anticipated need for, in 1870, [Fishbein] ★101
treatment, quinine and plasmochin combined for vivax type, [Most] 570—ab
MALE See *Spermatozoa*
Characteristics in Women See Virilism
Hormones See Androgens
Impotence See Impotence
Sterility See Sterility
MALFORMATIONS See Abnormalities
MALIGNANCIES See Cancer, Sarcoma (cross reference), Tumors, malignant
MALLEOMYCES mallei, human glanders, 622—E
MALNUTRITION· See Nutrition deficiency
MALPRACTICE See Medicolegal Abstracts at end of letter M
MALTA FEVER See Brucellosis
MAMMARY See Breast
MANDELIC Acid See Acid
MANDIBLE· See Jaws
MANNITOL hexanitrate, N N R, (Smith Dorsey) 179
hexanitrate for hypertension, 1042
MAPHARSEN See Oxophenarsine
MAPS medical service areas in U S, 1011—E, [Dickinson] ★1014
"MARCH of Dimes' See Poliomyelitis
MARCHETTI A A, appointment at Georgetown, 948
MARIE Strumpell Spondylitis See Spine arthritis
MARRIAGE See also Coitus, Contraception, Pregnancy, Medicolegal Abstracts at end of letter M
contraindicated in progressive muscular dystrophy? 212
cretinism and 898
of first cousins advisable? 1320
premarital blood test regulations amended, Calif, 189
MARROW See Bone Marrow
MARSHALL'S (Dr) Scalp Medications 568—BI
MARTLAND Lecture See Lectures
MARTYRS See also Heroes
poliomyelitis virus infection fatal in laboratory worker, [Wenner] 1303—ab
Ricketts (Howard Taylor), death in 1910, [Fishbein] ★764
MARYLAND medical care in, [Riley] **132**· ★326 Oct 12, '46
MASCULINITY See Virilism
MASTITIS See Breast Inflammation
MASTOIDITIS, treatment penicillin 420
MATERNITY See also Families, Pregnancy
leave advocated for federal worker 185—OS
mortality, continuous caudal anesthesia cause of, [McCormick] 801—C
mortality in prolonged labor, [Odell & others] ★735
MATHEWS GRADY Hoxsey—cancer charlatan, 774—E, (correction) 957
MAYO CHARLES W appointment 113
MAYO, WILLIAM J, address of A M A President 1907, [Fishbein] ★687
MAYO Foundation See Foundations
MEALS See Restaurants
MEASLES, German See Rubella
eruption, effects of antipyretic drugs on 508
sharp increase, Mass 637
MEASURES See Weights and Measures
MEAT See also Bacon, Trichinosis
Q fever in U S, [Topping & others] ★813, [Irons & Hooper] ★815 [Irons & others] ★819, [Cox & others] ★820
question of best animal feeds effect on 775—E
MECHOLYL bromide, toxicity, used as stimulant to smooth muscle of colon 655
treatment of myasthenia gravis 1252
MEDALS See Prizes
for War Service See World War II Heroes
MEDIASTINUM, cysts and tumors [Eerland] 431—ab
MEDICAL ACTIVITIES, Joint Committee for Coordination of See American Medical Association Joint Committee
MEDICAL AID to China, American Bureau for, 709
MEDICAL AND SURGICAL RELIEF COMMITTEE, medical supplies for war needy, 1025
MEDICAL ANNALS See Journals
MEDICAL ARTICLES See Articles, Journals
MEDICAL ASSOCIATION See American Medical Association, Societies, Medical, list of societies at end of letter S
MEDICAL AWARDS See Prizes
MEDICAL BOOKS See Books, Library, Book Notices at end of letter B
MEDICAL CARE See Medical Service
MEDICAL CENTER See also Health center, Hospitals center
El Paso, 491
medical science center in Rome 1231
New York University-Bellevue, 256, 1024
Northwestern University, 1292
predicted Washington, D C 699—OS
MEDICAL CENTER—Continued
U S Naval, (lectures at) 488, (lecture by P R Hawley) 703, (discusses medical aspects of atomic warfare) 1225
University of Colorado, 1291
MEDICAL CLINIC See Clinics
MEDICAL COLLEGE See Schools, Medical; University
MEDICAL CONGRESS· See Congress
MEDICAL CORPS See Army, U S, Navy, U S, Veterans Administration, World War II
MEDICAL DAYS of Brussels, 263
MEDICAL DEPARTMENT See Army, U S
MEDICAL DIATHERMY See Diathermy
MEDICAL DIRECTORY See American Medical Directory
MEDICAL ECONOMICS See Economics, Medical
MEDICAL EDITORS, Annual Conference of See American Medical Association, Annual Conference of
MEDICAL EDUCATION· See Education, Medical
MEDICAL EQUIPMENT See Medical Supplies
MEDICAL ETHICS See Ethics, Medical
MEDICAL EXAMINATION See Physical Examination
MEDICAL EXAMINERS See Coroners
MEDICAL FEES See Fees
MEDICAL FREEDOM, National League of, [Fishbein] ★761
MEDICAL GROUPS See Medicine, group *practice*
MEDICAL HISTORY See Medicine, history
MEDICAL INSTITUTE See Institute
MEDICAL JOURNALS See Journals
MEDICAL JURISPRUDENCE See also Evidence, Laws and Legislation, Medicolegal Abstracts at end of letter M
evaluating loss of hearing in medicolegal cases, (Council report) ★396
Indiana Supreme Court upholds license revocation 413
International Congress on Legal Medicine, 564
Ohio Supreme Court upholds conviction on abortion charge, 491
symposium on medicolegal problems, Chicago, 334, 636
MEDICAL LECTURES See Lectures
MEDICAL LEGISLATION See Laws and Legislation
MEDICAL LIBRARY See Library
MEDICAL LICENSURE See Licensure
MEDICAL LITERATURE See Literature (cross reference)
MEDICAL MAGAZINES See Journals
MEDICAL MEETINGS See Societies, Medical, list of Societies at end of letter S
MEDICAL MOTION PICTURE Reviews See Moving Pictures, Medical (Reviews)
MEDICAL OFFICERS See Army, U S, Navy, U S, World War II
Returning See Veterans, physician
MEDICAL PERIODICALS See Journals
MEDICAL PLANS See Medical Service Plans
MEDICAL PRACTICE See Medicine, practice, Physicians
MEDICAL PRACTICE ACTS See Licensure, Medicolegal Abstracts at end of letter M
MEDICAL PRACTITIONERS UNION and National Health Service, England, 495
MEDICAL PREPAREDNESS See World War II
MEDICAL PRIZES See Prizes
MEDICAL PROFESSION See Medicine, profession of Physicians, Surgeons
MEDICAL RECORD See Journals
MEDICAL RECORD LIBRARIANS, schools for, approved by A M A, ★1147, 1157—E
shortage, grants for extension course, 622—E 639
statistics on in all hospitals, ★1077
MEDICAL RESEARCH See also Research Council, (difficulty of finding cure for common cold) 419, (clinical tests with streptomycin) 1234
MEDICAL SCHOOLS See Schools, Medical
MEDICAL SCIENCE See Medicine, Research, Science
MEDICAL SERVICE See also Consultants, Health center, Health service, Hospitals, *Insurance sickness*, Medical Center Medicine group practice, Medicolegal Abstracts at end of letter M
A M A Council on See American Medical Association
A M A Reference Committee report, 38
areas in U S, apply principles of retail trading, 1011—E, [Dickinson] ★1014
doctor makes mercy flights piloting his own plane, 788—OS
Emergency See Emergency
for Armed Forces See World War II
for Children See Health services
for low income groups under Taft-Smith-Ball Donnell Bill, 869—OS
for lower income groups, committee report, [Cooper] 865—ab
for natives, Buenos Aires, 882
for Veterans See Hospitals, veterans; Veterans, medical care
MEDICAL SERVICE—Continued
free, from 1950, Sweden, 420
Industrial See Industrial Health
maladjustment, locating doctor at every crossroad not the solution, [Shoulders] 866—ab
National Conference on, 337
Plans See Medical Service Plans *following*
Rural See Rural Communities
Supply of Physicians for See Physicians, location, Physicians supply
Taft-Smith Ball-Donnell Bill See Taft
Wagner-Murray-Dingell Bill See Wagner
MEDICAL SERVICE PLANS See also Hospitals, expense insurance Medicolegal Abstracts at end of letter M
A M A Council on Medical Service, (report) 35, (seal of acceptance awarded) 112—OS
film on prepayment (Reference Committee report), 36
fundamental requirements of insurance applied to, [Dickinson] 481—E, ★483
rural enrolment experience, Kansas City, Mo, [Helsby] 407—ab, [Mertz] 782—ab
voluntary prepayment, committee report, [Doughty] 862—ab
MEDICAL SOCIETY See Societies Medical, list of societies at end of letter S
MEDICAL STUDENTS See Students, Medical
MEDICAL SUPPLIES See also Apparatus, Cast, Dressings Drugs, Suture
for war needy, 1025
surplus drugs, sale of, 951
surplus medical, dental and hospital supplies, subcommittee report, 941—OS
surplus plasma distributed by American Red Cross, 482—OS
surplus property (Joint Committee report), 41
surplus, sale, 703, 1162, 1225
surplus, sale of portable roentgen apparatus, 559
surplus surgical sutures, sale 114
surplus transfusion sets, sale of, 951
MEDICAL TECHNICIANS, Technologists· See Technologists
MEDICAL TERMINOLOGY See Terminology
MEDICAL TESTIMONY See Evidence
MEDICAL VETERANS See Veterans, physician
MEDICAL WOMEN See Physicians, women
MEDICAL WRITING See Literature (cross reference)
MEDICALLY HANDICAPPED See Disability; *Handicapped*
MEDICATION See Drugs, Self-Medication
MEDICINE See also Education, Medical; Medical Service, Physicians, Surgery
Academy of See Academy
Advances in See Medicine, progress
Annals of Western Medicine and Surgery, 1227
Anglo French medical cooperation, West Africa, 195
Aviation See Aviation
Congress of See Congress
Cults See Chiropractors, Cults, Naturopathy, Osteopaths
Fellowships See Fellowships
Forensic See Medical Jurisprudence
Foundations aiding See Foundations
group practice, and A M A in 1922 [Fishbein] ★927, ★928
group practice, medical groups in U S, 1946, [Dickinson] ★1222
history, A M A resolutions on establishing A M A Council on, 40
history, autobiography of Cardano, 749—ab
history, Chinese Golden Mirror of Medicine (1749) at Army Medical Library, 1018
history, first operation for gallstones by Dr Bobbs, 1905, [Fishbein] ★683
history, Klebs Library of Yale receives 334
history of Ohio in Ohio Historical Quarterly, [Forman] 625—ab
history of, Puerto Rico, 1230
Industrial See Industrial Health
Institute of See Institute
Internal See Internal Medicine
Law in relationship to See Medical Jurisprudence
Lectures on See Lectures
Legal See Legal Medicine (cross reference)
'Medicine Serves America," electrical transcriptions by A M A Bureau 324—E, 326
Military See Military Medicine, World War II
nursing and, a joint enterprise 20—ab
Organized See American Medical Association, Societies Medical
Physical See Physical Medicine
Practice See Licensure, Medical Service, Medicine, group practice, Physicians, Specialties
practice euphemisms and equivalents in, 183—E
practice, Indiana Board of General Practice of Medicine Inc, by laws, 43, 942—OS
Practice, Opportunities for See Physicians, positions open
Preventive See Preventive Medicine
Prizes See Prizes
Profession of See also Physicians, Specialists, Surgeons, etc

MEDICINE—Continued
  profession of, and public relations, [Swart] 554—ab
  profession of, ethical responsibilities, in Germany, brutalities in American psychiatric hospitals, [Wertham] 645—C
  profession of, USPHS to survey, 1159—OS; [Dickinson] *1222
  progress and research, 400—E
  Psychosomatic: See Psychosomatic Medicine
  Research in · See Research
  Royal Society of: See Royal Society
  Rural. See Rural Communities
  Scholarships See Scholarships
  Socialized See Insurance, sickness; Insurance social, Medicine, state
  Socialized, National Health Service (White Paper, Beveridge Scheme): See National Health Service Act
  Socialized, Wagner-Murray-Dingell Bill See Wagner
  Societies See Societies, Medical
  Specialization See Specialization; Specialties
  state, A. M. A definition, [Fishbein] *925; *928
  Tropical. See Tropical Medicine
  Women in: See Nurses, Physicians, women
MEDICINE AND THE WAR: See World War II
MEDICINES · See Drugs; Nostrums; Proprietaries
MEDICOLEGAL See Legal Medicine (cross reference); Medicolegal Abstracts at end of letter M
MEDREX Ointment and Soap, 422—BI
MEDULLA SPINALIS See Spinal Cord
MEEK Fund · See Foundations
MEETINGS See Societies, Medical; list of Societies and organizations at end of letter S
MEGACOLON See Colon
MELANCHOLIA · See also Mental Depression
  treatment, prefrontal leukotomy in women, [Parker], 274—ab
MELANOPHORE reaction in diagnosis of pregnancy, [de Bourgraaf] 730—ab
MELANOSIS, congenital papillary, 714
MELARSEN oxide in malaria, [Payne] 893—ab
  oxide in tropical disease, [Payne] 893—ab
MEMORIAL to Physicians See Physicians
MEN See Male (cross references)
  in Service See Veterans World War II
MENADIONE, solution (in oil), N N R., (Miller; Vale), 937
MENDELL, BROOKS: warning of impostor, 492
MENIERE'S Syndrome See Vertigo, aural
MENINGES, cerebellar subdural hydroma, [Grant] 889—ab
  Hernia of See Meningocele
MENINGITIS See also Arachnoiditis; Meningoencephalitis
  Benign lymphocytic See Choriomeningitis
  diagnosis symptomatology, [Vujic] 895—ab
  Friedlander's bacillus, streptomycin for, [Tartakoff] 351—ab
  influenzal, outcome vs bacterial type, [Zinnemann] 894—ab
  influenzal, streptomycin for, [Hoyne] 721—ab
  pneumococcic, sulfonamide plus penicillin in, [Ross] 892—ab
MENINGOCELE, intrathoracic, [Cabello Campos] 730—ab
MENINGOCOCCEMIA, sudden and unexpected deaths of young soldiers, 325—E [Moritz] 721—ab
MENINGOCOCCUS Septicemia See Meningococcemia
MENINGOENCEPHALITIS after vaccination for zoster ophthalmicus, [Madonick] 133—ab
  Syphilitic See Dementia Paralytica
MENNINGER Foundation See Foundations
MENOPAUSE, delayed, and uterine myoma, [Crossen] *597
  pathologic findings in genital bleeding 2 or more years after, [Cheek] 425—ab
  vitamin B complex affect? 1253
MENORRHAGIA See Menstruation disorders
MENSTRUATION, Cessation of See Menopause
  Disorders See also Dysmenorrhea
  disorders, androgens in functional uterine bleeding, 1253
  disorders, control menorrhagia by testosterone and progesterone, [Greenblatt] 723—ab
  epilepsy during, [Burnett] 1037—ab
  migraine associated with, 812
  premenstrual bleeding, 214
  Story of (motion picture review), 1033
  vicarious, 811
MENSURATION. See Weights and Measures
MENTAL DEPRESSION See also Melancholia
  treatment, surgical [Van Wagenen] 273—ab
MENTAL DISORDERS See also Alcoholism, Dementia Paralytica; Dementia Precox, Psychoses
  cerebral dysrhythmia and psychopathic personalities, [Simon] 721—ab
  diagnosis, grammar-rhetoric indicator, [Mayer] 725—ab
  diagnosis, methedrine in, [Simon] 724—ab
  Hospitalization in See Hospitals, psychiatric; Hospitals, state
  porphyria, [Schneck] 202—ab

MENTAL DISORDERS—Continued
  psychiatric sense and nonsense, [Burlingame] *971
  research, USPHS funds for, 790
  treatment, bilateral frontal lobe leukotomy, [McKenzie] 134—ab
  treatment, electric sleep (shock), [Holbrook] 65—ab
  treatment, new program, Calif., 954
  treatment, prefrontal leukotomy in 100 women, [Parker] 274—ab
  treatment, prefrontal leukotomy, results, England, 1234
  treatment, restraint of insane, 1878, [Fishbein] *177
  treatment, shock treatments with curare (intocostrin), [Cohen] 503—ab
MENTAL EFFICIENCY: See Intelligence
MENTAL HEALTH. See Mental Hygiene
MENTAL HOSPITALS: See Hospitals, psychiatric; Hospitals, state
MENTAL HYGIENE clinic W. Va, 51
  committees, W. Va, 415
  courses proposed for U S Military Academy, 327—OS
  National Advisory Mental Health Council, (advocate training 600 in psychiatric work) 405, (meeting, membership) 409
  National Mental Health Act, USPHS annual report, 702
  National Mental Health Foundation, educational program, 1230
  positions, examinations for, 562
MENTAL TENSION, hypnagogic hallucinations, 1253
  sodium amytal test for latent anxiety, [Susselman] 500—ab
MENTALITY See Intelligence
MEPACRINE · See Quinacrine
MEPERIDINE HYDROCHLORIDE (demerol; isonipecaine), addiction to, [Curry] *243; (Council discusses) 850
  addiction to, not classed as narcotic in Italy, [Musella] 198—C
*di*MERCAPTOPROPANOL: See BAL
MERCURY, deposition in eye, [Abramowicz] 352—ab
  toxicity, acute poisoning, BAL for, [Longcope] 136—ab
  toxicity of diuretics [Ben-Asher] 348—ab
  toxicity, tetany after diuresis, [Marshall] *1007
MERKLE, Gland of See Hibernation
MESANTOIN, treatment of epilepsy, [Lennox] 130—ab
METABOLISM. See also under names of specific substances
  basal, effect of brown fat extracts on. 436
METAL. See Cadmium; Copper, Lead; Silver; Tantalum, Vitallium
METASTASES · See Cancer
METHEDRINE See Desoxyephedrine
METHEMOGLOBINEMIA in infants from nitrates in well water, [Faucett] 271—ab
  in infant from bismuth subnitrate used for diarrhea, methylene blue for [Wallace] *1280
METHENAMINE, N N R (Miller), 179
METHIONINE, prevention and treatment of liver injury (Council report) 107
  treatment of anemias. [Gajdos] 574—ab
n-METHYLAMPHETAMINE (methedrine) in psychiatric diagnosis, [Simon] 724—ab
METHYL CHLORIDE, toxicity, 145, [Smith] 1309—ab
20-METHYLCHOLANTHRENE, what dosage to produce skin cancer in mice? 435
METHYLENEBIS (hydroxycoumarin) · See Dicumarol
METHYLENE BLUE: See Methylthionine Chloride
METHYLENE DICHLORIDE (dichloromethane) toxicity, 145
METHYL METHACRYLATE, use in extrapleural pneumonolysis, [McCains] 1312—ab
METHYL-NAPHTHOQUINONE See Menadione
MEHYLOXAZOLIDINE See Trimethadione
METHYL PHENYLETHYLHYDANTOIN, treatment of epilepsy, [Lennox] 130—ab; [Von Hagen] 889—ab
METHYLTHIONINE CHLORIDE, treatment of methemoglobinemia in infant from bismuth subnitrate, [Wallace] *1280
METHYLTHIOURACIL, treatment of hyperthyroidism 544—E, [Fisk] 574—ab, [Porte] 1172—ab
METHYLXANTHINES, effect on prothrombin activity, [Rieben] 69—ab
METREURYNTER, use in uterine bleeding; 74
METRIC SYSTEM, 1879, [Fishbein] *177
METROPOLITAN Life Insurance Co, (tuberculosis statistics in U. S), 698—E; (decline in mortality from syphilis) 709
MICE, mouse brain vaccine in epidemic encephalitis, [Sabin] *281
  mites on, rickettsialpox, [Huebner] 272—ab; [Greenberg & others] *901
MICHIGAN, University of: See University
MICROBIOLOGY: See Bacteria; Bacteriology
MICROFILM service available to physicians by Army Medical Library, 789

MICROORGANISMS: See Bacteria
MICROPRINTS: See Microfilms
MICROSCOPY, phase contrast, 56
MICTURITION: See Urine, incontinence; Urine, suppression
MIDDLE AGE · See Age
MIDDLESEX Medical College, 1923, [Fishbein] *932
MIDWIFERY: See Obstetrics
MIGRAINE. See also Headache
  associated with menstruation, 812
  experimental production, (reply) [Foldes] 280
  psychosomatic disorders, [Harrington] *670
  treatment, dihydroergotamine (D. H. E 45), [Pollock] 502—ab
  treatment, nicotinic acid or ergotamine tartrate (gynergen), 812
  treatment, testicular or ovarian preparations, [Baitstra] 1317—ab
MILITARY: See also Army, U S; Veterans; World War II
  Citations: See World War II, Heroes
  medicine, International Committee of, 262
  medicine, International Congress of, June 1947, 262; 1231
  medicine research by War Department, 950
  training (universal) (War Department seeks adoption) 185-OS; (testimony favors) 250—OS
MILK, acidophilus, alteration of intestinal flora, 970
  borne epidemic of diarrhea in newborn nursery, [Ensign] 271—ab
  conference, England, 55
  human, nursing by syphilitic mother, 810
  pasteurization; fallacies of, William Brady, M D, newspaper columnist, 249—E
  production, efficiency, question of best animal feeds, 775—E
  raw, brucellosis in Puerto Rico, [Hernandez Morales] 204—ab
  Sugar. See Lactose
  transmission of Brucella abortus, 1042
MILLER, TRUMAN W, editor of JOURNAL, 1899, [Fishbein] *474
MILLER Lecture. See Lectures
MINERAL: See also Gold, Iron; Lead; Silver
  baths, Sul-Ray Effervescent 422—BI
  Helio Minerals, 264—BI
  mobilization from skeleton; lability of bone, 110—E
  water, Buffalo, 422—BI
  water, Colestin Natural, 568—BI
  water, Hamby's Dawson Springs Water, 568—BI
MINERS, coal, A M A. resolution on Bituminous Coal Mine Wage Agreement, 35
  coal (anthracite), pneumonoconiosis in, [Gooding] 894—ab
  operators term Lewis health and welfare fund "economic blackmail," 556—OS
  United Mine Workers Health Fund (Reference Committee report) 36; [Dickinson] *1285
MINNESOTA, medical service areas in, [Dickinson] *1014
  ringworm of scalp; [Steves & Lynch] *306
MINRA, 422—BI
MISCARRIAGE See Abortion
MISSISSIPPI Valley Medical Society Contest: See Prizes
MITES. See also Acariasis; Mice
  Bite Fever · See Tsutsugamushi Disease
  grain, infest urinary tract, [Crance] 1243—ab
MITRAL VALVE, calcification of annulus fibrosus, [Rytand] 571—ab
MOHLER, CHARLES, death of assistant business manager of A M A., 45—OS
MOLD. See also Actinomyces; Penicillin
  removal of odor from books, [Munkelt] 344—C
MOLE, Hydatidiform: See Placenta tumors
MONONUCLEOSIS, INFECTIOUS, benign lymphocytic meningitis and, [Tidy] 728—ab
  blood and bone marrow in, [Limarzi] 201—ab
  diagnosis (differential) from rickettsialpox, [Greenberg & others] *904
  in puerperium and in newborn [Trincao] 142—ab
  serum, agglutination of erythrocytes by, [Burnet] 67—ab
MONOXIDE See Carbon Monoxide
MONUMENTS · See Physicians, monuments
MOOREHEAD, FREDERICK B, memorial fund, 1291
MORBIDITY: See Disease
  Statistics · See Vital Statistics
MORPHINE addiction, sialorrhea and, 899
  alcoholic beverages doped with, 1253
MORTALITY: See Accidents, fatal; Death; Infants; Maternity; Vital Statistics, etc; under names of specific diseases as Leukemia, Syphilis
MOSQUITOES, control, cooperative, N. J., 1293
  Cook County, 1292
  efficacy of insecticidal sprays in aircraft, [Garnham] 140—ab
  transported in old tires filled with water, 559; [Pratt] 725—ab
MOSS, California Spanish, antibiotic from, [Marshak] 1245—ab
MOTHERS: See Families; Maternity; Pregnancy
  Milk See Milk, human

MOTION PICTURES: See Moving Pictures
  Reviews: See Moving Pictures, Medical
MOTION SICKNESS, mechanism, [Morton] 1306—ab
MOTOR Automatism: See Mental Tension
  component of retinal stimuli; fusion movements, 713
MOTOR VEHICLES: See Automobiles
MOTT Foundation: See Foundations
MOULTON, GEORGE A., honored, 708
MOUSE: See Mice
MOUTH: See also Cheek; Jaws; Teeth; Tongue
  Inflammation: See Stomatitis
  surgery, intravenous barbiturates for, 812
  Trench: See Angina, Vincent's
  ulcer, grave eye disease with, Behcet's syndrome, [Thomas] 1246—ab
MOVEMENTS: See Eyes, movements; Motor
MOVING PICTURES, commentators fear production glamorizing use of drugs, 46—OS
  film on prepayment plans (Reference Committee report), 36
  Medical, Reviews of: See Moving Pictures, Medical (Reviews) *following*
  new films added to A.M.A. library of films, 802
  Walter Reed patients view film about amputee, "The Best Years of Our Lives"
MOVING PICTURES, MEDICAL (REVIEWS)
  Anesthesia (Merck & Co.) 346
  Convalescent Care and Rehabilitation of Patients, with Injury to Spinal Cord, 1033
  Energy Release from Food, 717
  Neurosurgery in Overseas General Hospital, 1033
  New Horizon (National Foundation for Infantile Paralysis) 346
  Story of Menstruation, 1033
  Technique of Anaesthesia, 265
MUCOUS MEMBRANES: See Endometrium; Intestines
MULTIPLE Births: See Twins
MUMPS: See Parotitis, Epidemic
MURDER: See also Suicide
  of physicians in 1946, 108—E
  violent deaths in Cook County, Ill., 412
MURPHY, JOHN B., makes new proposals, 1912, [Fishbein] *765; (accused of advertising) *838
MURRAY-Dingell-Wagner Bill: See Wagner
MUSCLES: See also Cartilage; Tendons
  Cardiac: See Myocardium
  Cramps: See Cramps
  Dystrophy: See Dystrophy
  electromyography in differential diagnosis of ruptured cervical disk, [Brazier] 721—ab
  Eye: See Orthoptics
  gluteus medius weakness (severe), subtrochanteric osteotomy for, [Irwin] *233
  Inflammation: See Fibromyositis
  lesions in arthritis, [Gibson] 67—ab
  relaxation in abdominal surgery with pentothal-oxygen-curare, [Davison] 1245—ab
  scalenus anticus syndrome, scalenotomy for, [Tanna] 1241—ab
  Spasm: See Spasm; Tetany
  Sphincter: See Sphincter Muscles
  Strength, Decrease of: See Myasthenia gravis
  tibial (anterior), hernia; keloid (reply), [McKeever] 214
  tibial (anterior), paralysis of leg from spasm of anterior tibial artery, [Holstein] 382
  Tonus: See Dystonia
  transplant (free myocardial), 621—E
MUSCULAR Power: See Energy
MUSEUM: See Health museum
MUSTARD Gas: See diChloroethyl Sulfide
  nitrogen mustard gas (1149), burns from, [Uhde] 889—ab
MUSTY odor, removal from books, [Munkelt] 344—C
MUTES: See Deaf-mutism
MYASTHENIA GRAVIS: See also Dystrophy, muscular
  treatment, di-isopropyl-fluorophosphate (DFP) [Comroe] 886—ab; 1252
  treatment, review of various methods, 1252
MYCOSIS: See also Actinomycosis
  fungoides, [Lommen] 354—ab
MYELITIS: See Encephalomyelitis; Poliomyelitis; Spinal Cord, inflammation
MYELOMA, multiple [Bayrd & Heck] *147
  multiple, stilbamidine and pentamidine plus diet low in protein for [Snapper] *156
  multiple, stilbamidine for, [Snapper] 64—ab
MYELOSCLEROSIS: See Osteosclerosis *myelofibrosis*
MYOCARDITIS, virus, 496
MYOCARDIUM, free transplants, 621—E
  Infarction: See Thrombosis, coronary
MYOMA: See also Leiomyoma
  uterine, radiation therapy, [Crossen & Crossen] *593
MYOPIA, ciliary spasm, psychosomatic disorders, [Harrington] *671
  inheritance, 280
MYOSITIS: See Fibromyositis
MYOTONIA dystrophica: See Dystrophy, muscular
MYXEDEMA, Congenital: See Cretinism

MEDICOLEGAL ABSTRACTS

ABORTION: criminal; medical licenses; revocation of, 346
ARTHRITIS: trauma in relation to, 1302
  workmen's Compensation Act in relation to, 1302
ASSAULT AND BATTERY: dentists; unauthorized extraction, 266
BLOOD: paternity; blood grouping tests to determine, 498
CANCER: trauma as cause of, 1170
  workmen's compensation, 1170
CHIROPRACTIC PRACTICE ACTS: See also Medical Practice Acts
  board of examiners; resolutions; validity of, 646
  board of examiners; reversal of previous decision, 646
  examinations; right of one member of examining board to give, 646
  licenses; revocation; grounds; necessity for notice and hearing, 646
  licenses; revocation; right of board, 646
CONTRACTS: hospital services; necessity for, who determines, 60
  hospital services; refusal to furnish, 60
DENTAL PRACTICE ACTS: licenses; revocation; felony; conviction of, 126
  licenses; revocation; felony; evidence of guilt, 126
  licenses; revocation; rape, 126
DENTISTS: See Dental Practice Acts; Malpractice
EMPLOYEE: medical director as, 569
EVIDENCE: See also Malpractice; Privileged Communications; Workmen's Compensation Acts
  blood grouping tests; paternity, 498
  insanity; expert witness appointed by court; sufficiency of evidence, 1034
  insanity; lay testimony; need for, 1034
  scientific test; blood grouping to determine paternity, 498
  witnesses, expert; credibility, 1034
  witnesses, expert; necessity for in malpractice case, 423
  witnesses, expert; preponderance; court not bound by, 1034
  witnesses, expert; standards of care; competency to testify concerning, 423
FOOD AND DRUG ACTS: federal; "accompanying;" meaning of, 126
  federal; printed matter accompanying drugs; misbranding, 126
HOSPITAL SERVICE PLANS: contracts; failure to furnish hospitalization, 60
  hospitalization; when necessary; who determines, 60
HOSPITALS, CHARITABLE: intern; hospital's liability for negligence of, 884
  negligence in employment of unlicensed dental intern, 884
  taxes; criteria of charitable status, 266
  taxes; exemption from, 266
HOSPITALS, GOVERNMENTAL: insane asylum; records; privileged communication in relation to, 199
HOSPITALS, IN GENERAL: failure to furnish hospital service; good faith of staff physician, 60
  hospital records; privileged communication in relation to, 199
  invitees; liability for injury to, 266
INSANITY: civil; sufficiency of evidence, 1034
  civil; value of physician's certificate, 1034
INSURANCE, IN GENERAL: medical service plans, 718
  medicine; practice of in relation to, 718
MALPRACTICE: dentists; expert testimony; necessary for, 884
  dentists; extraction authorized, 266
  dentists; operation; assault and battery, 266
  dentists; operation; skill and care required, 423
  dentists; saw; laceration from slipping, 423
  dentists; skill and care required, 266
  dentists; unlicensed dental intern, 884
  evidence; witnesses, expert; necessity for, 423
  evidence; witnesses, expert; standards of care; competency to testify concerning, 423
  limitation of actions; accrual of right of action, 1239
  limitation of actions; strict or substantial compliance with statutes, 1239
  skill and care, dentists; competency of witness, 423
in relation to, 1170
dultery; abnormal
chiropractic; as
  chiropractic; manipulation as treatment, 802
  licenses; revocation; abortion; criminal, 346
  licenses; revocation; abortion; sufficiency of evidence, 346
  licenses; revocation; abortion; testimony of accomplice; admissibility of, 346
  licenses; revocation; due process; denial of, 346
  licenses; revocation; felony; narcotics; unlawful sale of, 60
  licenses; revocation; narcotics; prescribing for addict, 60
  licenses; revocation; rules of evidence applicable, 346
MEDICAL SERVICES: insurance in relation to contracts to provide, 718
PHARMACISTS: error in filling prescription, 1302
  prescriptions; error in filling, 1302
PREGNANCY: gestation; length of, 347
PRESCRIPTION: as "sale" of drug, 60
  error in filling; misdemeanor, 1302
  error in filling; pharmacists liability, 1302
PRIVILEGED COMMUNICATIONS: consulting physician, 801
  examining physician, 801
  hospital records, 199
  limitations; inmates of state hospital, 199
  physicians of state hospital, 199
  waiver; testimony in court; consulting physician, 801
  waiver; testimony in court; one of several attending physicians, 801
SCIENTIFIC TESTS: See Evidence
SELECTIVE SERVICE AND TRAINING ACT: physician-veterans; right to former employment, 569
STATUTE OF LIMITATIONS: See Malpractice; limitation of actions
TAXES: hospitals; when charitable institution exempt, 266
TRAUMA: arthritis; evidence; witnesses, expert; conflict of medical testimony, 1302
  cancer attributed to, 1170
  disease attributed to, 1170
WORDS AND PHRASES: "accompanying," 126
  "cancellation," 646
  "prescribe," 60
  "unreasonable," 569
WORKMEN'S COMPENSATION ACTS: arthritis; aggravation of; 1302
  arthritis; trauma in relation to, 1302
  cancer; trauma as cause of, 1170
  claim; delay in filing; advice of physician, 964
  claim; delay in filing; when excusable, 964
  disease; trauma as cause of, 1170
  evidence; conflict of medical testimony; denial of award, 1301
  evidence; legal and medical theories, 964
  eyes; blindness; uveitis; creosote fumes, 964
  eyes; creosote fumes; uveitis, 964
  eyes; uveitis; cause of, 964
  malpractice by physician; liability for, 1170
  uveitis; cause of, 964

N

N. N. R.: See American Medical Association New and Nonofficial Remedies; under names of specific products
NAILS, destroyed bed, restoration, 1044
  fluorescence of, 1252
beta-NAPHTHOL treatment of fasciolopsis infection, 900
NAPHTHOQUINONES Having Vitamin K Activity: See Menadione; Vitamins K
NARCOTICS: See also Harrison Narcotic Law; Morphine
  addiction, commentators fear moving pictures glamorizing, 46—OS
  illegal drug traffic, decrease in; but more arrests, 482—OS
  order forms, lost or stolen, 492
NASAL: See Nose
  Sinusitis: See Sinusitis, Nasal
  Tube: See Duodenal Tube
NASOPHARYNGITIS: See Colds
NASOPHARYNX, radon applicator for asthma in children, [Ward & others] *1060
NATIONAL: See also American; International; list of Societies at end of letter S
  Advisory Cancer Council (conference on gastric cancer 187; (membership) 790
  Advisory Health Council, (membership) 790; (medical research grants recommended) 1289
  Advisory Mental Health Council, (training 600 in psychiatric work) 405—OS; (meeting; membership) 409
  Board of Medical Examiners, (certification of general practitioners, Joint Committee report) 43; 943; (organized in 1915) [Fishbein] *837; *839
  Cancer Institute, tests of new chemical compounds, 631—OS
  Cancer Institute (Canadian), 1231
  Committee for Employment of Handicapped, 46—OS
  Conference on Health in Colleges, (3rd), 1217—E
  Conference on Rural Health, (program) 326—OS; (proceedings) 778—OS; 860—OS
  Council of Order of Doctors, old age insurance and, France, 1234
  Council on Rehabilitation, 708
  Defense: See also World War II
  Defense, U. S. Dept. of, single department urged, 185—OS
  Formulary published, 52
  Foundation: See Foundations
  Health Agency, 855—E; 868—OS
  Health Bill: See Taft-Smith-Ball-Donnell Bill
  Health Congress, (Reference Committee report), 36
  Health Council, (expands program) 639
  Health Program, Bill to Provide for: See Wagner-Murray-Dingell Bill

NATIONAL—Continued
  Health Service Act (Beveridge Plan; British "White Paper"), (dental benefits under) [Josselyn] 125—C, (government plan for taking over voluntary hospitals) 195; (plebiscite taken by B M A. on, results) 261; (interferes with doctor's orders) 341; (controversy on, by medical profession) 419, (socialistic medical bodies and) 495, (conflict) 643; (B M A decides to negotiate with Minister of Health) 797, 880; (Central Health Council for) 880; (plans for) 1295
  Institute of Health (activities, USPHS annual report) 702; (Council discusses) 851
  League of Medical Freedom, [Fishbein] ★761
  League of Nursing Education, [Naffziger & others] 1168—C
  Mental Health Act, (USPHS annual report), 702
  Negro Health Week, March 30-April 6, 708
  Neurologic Congress (1st), Italy, 1235
  Organization for Public Health Nursing, [Naffziger & others] 1168—C
  pharmaceutical benefits scheme, proposed, Australia, 1031
  Research Council, (grants for research in endocrinology) 118; (Committee for Research in Problems of Sex) 492, (long range medical research program by) 1289
  Safety Council, (report on toll of accidents) 564; (traffic safety awards) 1294
  School Health Services Act 632—OS
  Science Foundation See Foundations
  Society for Prevention of Blindness Prize: See *Prizes*
  Turkish Medical Congress (9th), 1236
  University of Buenos Aires, 65 as retirement age, 196
NATIONS, United: See United Nations
NATUROPATHY practice, law authorizing repealed, Tenn , 415
NAUSEA · See Motion Sickness Vomiting
NAVEL CORD: See Umbilical Cord
NAVY, UNITED STATES See also World War II
  assignments, 488
  Commendation Ribbon, Medal See World War II, Heroes
  drive against vice, 112—OS
  Hospitals See Hospitals, Naval
  Medical Center, (lectures at) 488, (lecture by P. R. Hawley) 703, (discusses medical aspects of atomic warfare) 1225
  medical corps, 946—OS
  medical corps, letters from men not allowed to resign, reply by Captain Eaton, 44
  medical corps officers, examinations for 48
  Medical Officers Released by See World War II, medical officers
  medical officers (reserve), active duty for, 1225
  medical officers (reserve), needed, 560
  Nurses See Nurses
  physician veterans want hospitals to employ doctors with military service, 184—OS
  promotions, 6 to rear admiral, 114
  reserve officers, active duty for, 114, 331
  School of Aviation Medicine and Research, 488
  School of Tropical Medicine, Guam, 331
  Surgeon General lauds hospital corpsmen, 699—OS
  surgeons (acting assistant), suspend professional examinations for, 703
NAZIISM. See German occupation
NEARSIGHTEDNESS See Myopia
NECK · See *also Throat*
  cancer (primary), [Wieberdink] 208—ab
  syndrome and rheumatic cervical perispondylitis [Belart] 141—ab, (correction) 337
NECROPSY See *Autopsies*
NECROSIS See Jaws, phossy, Kidneys; Pituitary
NEEDLE: See Radon
  Biopsy See Liver
NEGROES, Addison's disease in, [Conn] 128—ab
  anemia (sickle cell) a race specific disease, 33—E
  delegates, admission to A M A House of Delegates, [Fishbein] ★101
  National Negro Health Week, March 30-April 6, 708
  negroid characteristics in infant, 280
  neuropsychiatric aspects of porphyria, [Schneck] 202—ab
  South African Negro or Bantu as parturient, [Heyns] 1037—ab
  syphilis in, penicillin treatment failures, [Sternberg & Leifer] ★3
NEISSERIA gonorrheae Infection: See Gonorrhea
NELSON'S Antacid Powder, 568—BI
NEMBUTAL: See Pentobarbital
NEOANTERGAN, antihistamine [*Friedlaender*] 1309—ab
NEOPLASMS: See Cancer; Sarcoma (cross reference); Tumors, under region or organ affected
NEOSTAM: See Stibamine glucoside
NEOSTIBOSAN, treatment in tuberculosis, [Rose] 269—ab
NEOSTIGMINE treatment of myasthenia gravis, 1252
  treatment of muscle spasm in rheumatoid arthritis, [Wramner] 1248—ab
NEPHRECTOMY: *See Kidneys excision*
NEPHRITIS: See also Pyelonephritis
  acute, prognosis for, 797
  glomerular, sarcoidosis simulating, [Klinefelter] 722—ab
  Tuberculous: See Kidneys, tuberculosis
NEPHROSIS: See Kidneys disease
NERVES See also Ganglion, Nervous System; Neur-
  Anesthesia. See Anesthesia
  Blocking · See Nervous System, Sympathetic
  Deafness. See Otosclerosis
  exposed, repair, 56
  facial, neurinoma of, [Kettel] 63—ab
  impulse, energy required for each one, 693—ab
  optic atrophy after hemorrhage from duodenal ulcer, [Levatin] 1306—ab
  optic chiasm, [Lyle] ★519
  optic, glaucomatous atrophy, [Barkan] ★530
  optic retrobulbar [Lyle] ★518
  optic, retrobulbar neuritis from digitalis, [Wagener] 200—ab
  Paralysis. See Paralysis
  peroneal palsy caused by crossing legs, [Nagler & Rangell] ★755
  phrenic, temporary elimination in hemoptysis, [Stangl] 431—ab
  Reflex See Reflex
  sciatic, stretching in acute rheumatic sciatica, [Cammaert] 968—ab
  splanchnicectomy in hypertension with abnormal pyelograms, [Nesbit] 1311—ab
  splanchnicectomy, late results, [Fontaine] 429—ab
  supraorbital section, for *hyperhidrosis, [Tarlov & Herz]* ★476
  Surgery See under various subheads of Nerves; Neurosurgery
  Syphilis See Neurosyphilis
  vagotomy for peptic ulcer, 181—E; [Bradley & others] ★459, [Miller & Davis] ★461; [Moore & others] ★741
  vagotomy, gastric ulcer aggravated by, [Blegen & Kintner] ★1207
  vagotomy, insulin test for intact nerve fibers after [Hollander] 1307—ab
  vagotomy (transthoracic) in peptic ulcer, [Ruffin] 1307—ab
  vagus, humoral transmission of effects, 761—ab
  vagus resection (transthoracic) in peptic ulcer, [Smith] 1313—ab
NERVOUS SYSTEM See also Brain; Ganglion, Nerves, Nervous System, Sympathetic, Spinal Cord
  Disease See Encephalomyelitis
  lesions in carbon monoxide poisoning, [Lhermitte] 806—ab
  Surgery See subheads under Nerves; Neurosurgery; Sympathectomy
  Syphilis See Neurosyphilis
  torulosis, [Hassin] 1309—ab
NERVOUS SYSTEM, SYMPATHETIC, blocking in local shock, [Thomson] 66—ab
  autonomic nervous system in ocular diseases, [Harrington] 719—ab
  Surgery See Sympathectomy
NERVOUS TENSION. See Mental Tension
NETHERLANDS, medical literature needed for libraries [Taylor] 345—C, [Kouwer] 715—C
  new fees for doctors fixed by mutual assurance foundation, 1300
NEURALGIA See Causalgia
NEURASTHENIA, tropical, 1216—E
NEURINOMA · See Fibroblastoma, perineural
NEURITIS, Retrobulbar: See Nerves, optic
  Sciatic See Sciatica
NEUROCIRCULATORY Asthenia See Asthenia
NEURODERMATITIS of hands from food allergy, [Rowe] 720—ab
NEUROLOGY. See also Nerves; Nervous System, Neuro-
  American Board of: See American Board
  disease after throat and skin infections, [Bronson] 500—ab
  manifestations in infectious hepatitis, [Weinstein] 887—ab
  National Neurologic Congress (1st), Italy, 1235
  practice, present trends, [Wilson & Rupp] ★509
  residency training in, 186
  Surgery in See Neurosurgery
NEUROMAS traumatic and amputation, [Cieslak] 722—ab
NEURONITIS, late, after diphtheria, [Sampson] 129—ab
NEUROPATHY of facial nerve (Bell's palsy), [Bergstrom] 1318—ab
NEUROPSYCHIATRY. See also Psychiatry
  Archivos de Neuro Psiquiatria, new journal, 1295
  aspects of porphyria, [Schneck] 202—ab
NEUROPSYCHOSIS. See Psychoneurosis
NEUROSIS. See also Psychoneurosis
  anxiety, in porphyria, [Schneck] 202—ab
  Cardiac · See Asthenia, neurocirculatory
NEUROSURGERY: See also Brain surgery; *Nerves, Sympathectomy*
  in Overseas General Hospital (motion picture review) 1033
  New York Society of Neurosurgeons, 116
  South American Congress of (2nd), 258
NEUROSYPHILIS · See also Dementia Paralytica; Tabes Dorsalis
  asymptomatic, prognosis, [Hahn] 425—ab
  incidence, decline 25 years after beginning of malaria treatment, 482—OS
  treatment, penicillin, [Rose & Solomon] ★5; [Koteen] 1241—ab
  treatment, penicillin plus malaria or fever cabinet, [Rose & Solomon] ★6
NEUTROPENIA See Agranulocytosis, Acute
NEW AND NONOFFICIAL REMEDIES: See American Medical Association; under names of specific drugs as Penicillin
NEW ENGLAND Journal of Medicine: See Journals
NEW GROWTHS: See Tumors
NEW HAMPSHIRE-Vermont Physicians Service, A M A Council seal to, 112—OS
NEW YORK · See also Columbia University
  Medical Record · See Journals
  rickettsialpox, [Greenberg & others] ★901
  State Medical Society and A M A 1884, [Fishbein] ★238, ★241
  state positions in public health, [Amos] 124—C
  University-Bellevue Medical Center grant, 256
  University scroll commemorating founding of the A M A, 877
NEWBORN See *Infants, Newborn*
NEWSPAPERS See also Journals
  advertising and state societies, [various authors] 628—ab
  columnist (William Brady), on pasteurization of milk, 249—E
  supervision of medical notes in lay press, Denmark, 123
NIACINAMIDE See *Acid,* nicotinic
NICOTINIC Acid: See Acid, nicotinic
NIEMANN-PICK Disease, [Pfandler] 1247—ab
NIKETHAMIDE treatment for hiccup, 810
9-9-9 Program See Interns and Internships
NITRATES, mannitol hexanitrate in hypertension, 1042
  Mannitol Hexanitrate, N N R, (Smith-Dorsey) 179
  in well water, methemoglobinemia in infants from, [Faucett] 271—ab
5-NITRO-2-FURALDEHYDE semicarbazone, use in dermatology, [Downing & others] ★299; [Morin] 963—C
NITROFURANS, use in dermatology, *[Downing* & others] ★299, [Morin] 963—C
NITROGEN balance, 247—E
  mustard gas (1149), burns from, [Uhde] 889—ab
NITROGLYCERIN · See Glyceryl trinitrate
*tri*NITROTOLUENE, liver injury from, methionine for, (Council report) 107
NOBEL Prizes See *Prizes*
NOCARDIA asteroides, actinomycosis from, [Kirby] 571—ab
NOISE, concussion deafness in 100 gunnery *instructors, [Stewart] 63—ab*
NOMENCLATURE See Terminology
NORDIC Association of Surgeons, Sweden, 1030
NORMAL what is "normal"? 1011—E
NORTHWESTERN University, (19 faculty members retire) 637, (Institute for Study of Rheumatic Fever) 791, (affiliates with Children's Memorial Hospital) 1023; (Medical Center) 1292
NORTON Medical Award · See Prizes
NORWAY, medical education in, 263
  BGG vaccination in, [Hertzberg] 1247—ab
NOSE See also Nasopharynx, Otorhinolaryngology
  Accessory Sinuses · See Sinusitis, Nasal
  carriers of hemolytic streptococcus, [Lemon] 137—ab; 322—E
  Colds See Colds, Hay Fever
  granuloma (malignant), [Hargrove] 140—ab
  hemorrhage, possible pseudohemophilia, 1320
  rhinoscleroma, [Reyes] 269—ab
NOSEBLEED See Nose hemorrhage
NOSTRUMS. See also under names of specific nostrums and diseases
  advertising in J. A. M. A, [Fishbein] ★464; ★470, ★607; ★608, ★612; ★613; ★683; ★836
  evil, England, 121
  Listed by A M A.: See *American Medical* Association Bureau of Investigation
  NOSTRUMS AND QUACKERY, first published 1912, [Fishbein] ★766
NOTALYSINE, initiator of bacteriolysis, [Hutter] 1217—ab
NOVOCAINE See Procaine Hydrochloride
NUFFIELD Foundation. See Foundations
NULFEY Tablets, 264—BI
NURSERY, day, for children, report on, Sweden, 1300
  for Newborn See Hospitals, nursery
NURSES See also Nursing
  aides, volunteer, statistics, ★1076; ★1077
  anesthetists, [Graham] ★99
  anesthetists, in all hospitals, ★1077
  Army appeals for more, 252
  Army chief, conference, 1018
  Army nurse corps (permanent), legislation, 947—OS; 1219—OS

NURSES—Continued
  flight graduate Randolph Field Texas, 1018
  from 31 countries, Capital is host to, 1015 —OS
  labor attempts to coerce to join a union, England 121
  more education for, Royal College of Nursing decision, 1029
  Naval nurse corps (permanent), legislation on, 947—OS 1219—OS
  Naval Reserve 200 needed now 111
  practical bill to end "fly by night' training schools for, 482—OS
  practical employment in hospitals 631—OS
  practical, symposium, W Va 190
  practical training programs, 794
  Public Health See also Nursing public health
  public health, examination N Y, 562
  shortage, 110—L, 252, 576—OS
  shortage American Surgical Assn resolution and statement 1156—L, [Naffziger & others] 1168—C
  shortage, England, 1165
  shortage in 1918, [Fishbein] ★811
  shortage, ward helpers to relieve, New York, 490
  statistics on in all hospitals ★1075, ★1076
  student, enrolment, plans to stimulate N Y, 562
  students recruitment, nationwide, 327—OS
  U S P H S, examinations for appointments 253
  wages (higher) requested, Sweden 1030
NURSING and medicine a joint enterprise 20 —ab
  center, opened in Chinatown N Y 876
  division USPHS annual report, 702
  Information Bureau booklet "Facts About Nursing 1946', 191
  needs of rural communities committee report [Sewell] 863—ab
  Public Health See also Nurses public health
  public health nursing week, 488 790
  schools of, advanced training for nurses, 1289
  schools of in 1868, A M A recommendations [Fishbein] ★26
  schools of in hospitals ★1075 ★1076
  schools of, short practical course, Mich, 1293
  service, appalling corruption of Egyptian State hospitals 1299
NURSING INFANT See Infants feeding
NUTRITION See also Diet, Food
  American Institute of; award 51
  A M A Council on Foods and Nutrition See American Medical Association
  British Journal of Nutrition 880
  congenital malformations due to, [Keitel] 716—C
  Deficiency See also Beriberi, Pellagra, Scurvy, Starvation, Vitamins
  deficiency, amblyopia in liberated prisoners, [Bloom] 62—ab
  deficiency, and peptic ulcer, 263
  deficiency in pregnancy, [Vilter] 206—ab
  during pregnancy, [Keitel] 345—C
  importance in tropical deterioration, 1216—E
  in Switzerland during the war [Fleisch] 354—ab
  Nutrition Bulletin, new journal, 495
  research needs in [Jeans] ★245
  Revista de Nutrition, new journal, 118
  Sociedad de Gastroenterologia y Nutricion, 348
  teaching of, in medical schools 1282—E
  training, Gould Research Foundation 708
  value of fats with sucrose or lactose, [Ershoff] 1304—ab
  Vitamins in See Vitamins
NUXATED Iron, 883—BI
NYSTAGMUS, hereditary, [Rucker] 887—ab

O

O B C Capsules Genuine 264—BI
OAK LEAF Cluster See World War II Heroes
OBESITY, constitutional aspects [Freyhan] 1032 —E, (reply), [Freed] 1032—C
  different weight responses to same provocation, [Johnson] 1238—C
  treatment, amphetamine sulfate, [Kunstadter] 800—C
  treatment, Dr Parrish s frauds 57—BI
  treatment, psychic factors amphetamine sulfate and thyroid, [Freed] ★369
OBITUARIES See list of Deaths at end of letter D
OBSTETRICS See also Abortion, Cesarean Section, Labor, Pregnancy, Puerperium
  Anesthesia in See Anesthesia
  Congress of (6th), Argentine, 343
  International Congress of, July 7, 1947, 416
  progress in 1889, [Fishbein] ★317
  Royal College of, controversy on National Health Service, England, 419
  Sociedad Yeateca de Obstetricia y Ginecologia, Mexico, 118
OCCUPATIONAL Dermatoses See Industrial Dermatoses
  Diseases See Industrial Diseases
  Health See Industrial Health
OCCUPATIONAL THERAPY (motion picture review) 802
  technicians, schools approved by A M A, ★1148
  technicians, statistics, in all hospitals ★1077
  technicians (trained) campaign for, 802
OCHSNER, E H attacks Dr Billings, state medicine, 1921, [Fishbein] ★925
OCULAR Symptoms See Eyes, Vision
ODOR removal from books, [Munkelt] 341—C
OFFICE See also Physicians
  of Scientific Research and Development Committee on Medical Research, 1295
OFFICERS See Army U S Navy, U S, World War II, medical officers
OHIO See Cleveland
  State Medical Journal See Journals
OIL Iodized See Iodized Oil
OINTMENTS containing estrogenic substances, (Council report) 1009
OKINAWANS, necropsies on, [Steiner] 133—ab
OKLAHOMA, Hoxsey—cancer charlatan, 774 —E (correction) 957
  Medical Research Foundation See *Foundations*
OLD AGE See also Physicians veteran
  appendicitis (acute) in [Simpson] 1037—ab
  benefits stressed in economic report 184—OS
  course in geriatrics, Buenos Aires, 882
  food delivery scheme for aged to diminish hospital overcrowding, 643
  geriatrics research laboratory N Y, 116, 414
  health in aging population, 414
  Insurance See Social Security
  peptic ulcer in, [Kiefer & McKell] ★1055
  prostatectomy in tenth decade [Frater] 69 —ab
  research in geriatrics, Nuffield Foundation gift to Cambridge for, 1234
  toxic goiter in, [Whishaw] 352—ab
  wrist injuries in elderly patients, [Griffiths] 806—ab
OMENTUM, primary torsion, [Altemeier] 1036 —ab
ONCHOCERCIASIS *See Filariasis*
OPERA Tablets 883—BI
OPERATION See Surgery, under names of specific organs and diseases
  Early Rising after See Convalescence
  Illegal See Abortion, criminal
OPHTHALMIA neonatorum See Conjunctivitis, infectious acute
OPHTHALMOLOGIST, rebates to, on prescribing, glasses, [Patek] 715—C, [Fishbein] ★933
OPHTHALMOLOGY See also Eyes, Orthoptics, Vision
  American Board of See American Board
  Heed Ophthalmology Foundation fellowships 1230
  Hispano-American Society assembly (24th), 567
  Oxford Opthalmological Congress award, 706
  Pan American Congress of (3rd) 118 492
  penicillin (pure) in, [Sorsby] 428—ab
OPTIC ATROPHY See Nerves, optic
OPTIC NEURITIS See Nerves optic
OPTIC TRACT, [Lyle] ★519
ORAL CAVITY See Mouth
ORATIONS See Lectures
ORCHITIS See Testis inflammation
ORGANIZATIONS See Societies Medical, list of Societies and Other Organizations at end of letter S
ORGANIZED Labor See Industrial Trade *Unions*
  Medicine See American Medical Association, Societies Medical
ORIENTAL SORE See Leishmaniasis cutaneous
ORNITHOSIS See Psittacosis
ORTHOPEDICS See also Bones, Foot
  Hospitals See Hospitals orthopedic
  operations under refrigeration anesthesia, [Crossman & Allen] ★380
  procedures, local use of ice after, [Schaubel] 269—ab
  surgery, choice of anesthesia in, [Dillon] ★829
  surgery, International Congress for, Sept 1948, 1300
ORTHOPTICS council examinations 794
  task of orthoptist (Council article) [Lancaster & Lancaster] ★1211
OSLER-Weber Rendu Disease See Telangiectasia
OSSIFICATION See Calcification (cross reference)
OSTEITIS deformans, Paget's disease [Newman] 350—ab
OSTEOARTHRITIS treatment, lactic acid injection, [Mawson] 352—ab
OSTEODYSTROPHY, renal, [Norman & others] ★771
OSTEOGENESIS imperfecta See Fragilitas ossium
OSTEOMYELITIS of lumbar spine in adult, [Freeman] 140—ab
  treatment, bacitracin, [Meleney & Johnson] ★675
OSTEOPATHIA condensans disseminata See Osteosclerosis myelofibrosis
OSTEOPATHS appear, 1897, [Fishbein] ★468
  challenge in treatment of pneumonia in 1922, [Fishbein] ★929
  to serve in Veterans Administration, 186
OSTEOPOROSIS, post-traumatic, Sudeck's atrophy, 577
  mild in renal osteodystrophy [Norman & others] ★771
OSTEOSCLEROSIS myelofibrosis secondary in prostate cancer [Bersack] 131—ab
OTITIS MEDIA acute, penicillin to prevent in scarlet fever, [Weiss] 206—ab
  aero otitis, treatment [Behnke] ★452
OTOLARYNGOLOGY See also Ear, Larynx
  request A M A to publish journal in [Fishbein] ★767 ★931
OTORHINOLARYNGOLOGY See also Ear, Larynx, Nose
  French Society of, congress, 420
  treatment, penicillin 420
OTOSCLEROSIS, progress in, 938—E
OURINE formerly sold as Aurine, 422—BI
OVARY, cancer, ratio in uterine myoma, [Crossen] ★595
  extracts for migraine, [Bartstra] 1317—ab
  hormone and mammary cancer, 643
  struma ovarii, [Smith] 722—ab
  tumor possible masculinizing, 213
  tumors dysgerminoma [Custer] 66—ab
OVERVENTILATION See Respiration, hyperventilation
OVUM See Impregnation
OVERWEIGHT See Obesity
OVIDUCTS, cancer, (primary), [Bancroft-Livingston] 894—ab
  ligation as contraceptive, effects, 1254
  Pregnancy in See Pregnancy, ectopic
OXALATES, effect on calcium metabolism, 1010 —E
OXFORD Ophthalmological Congress award, 706
OXIDIZED cotton hemostatic dressing in anorectal surgery [Rosser] 893—ab
OXOPHENARSINE hydrochloride (mapharsen) poisoning BAL for [Cohen & others] ★749
OXYGEN, deficiency acclimatization to anoxia, [Houston] 650—ab
  deficiency, angioscotoma in prolonged mild *anoxia, [Smith] 1308—ab*
  deficiency, anoxia and respiration in aviators, [Behnke] ★453
  deficiency glucose vs anoxia in flying personnel 776—E
  deficiency, hypoxia in aviators, [Pitts] 1301 —ab
  liquid converter for breathing purposes, 559
  pentothal curare to induce muscular relaxation in abdominal surgery, [Davison] 1245 —ab
  pressure gradient between maternal and fetal blood [Barron] 207—ab
  Quotient See Metabolism, basal

P

PABULUM theory in causation of suppuration of wound [Lyons] ★215
PACIFIC, War in See World War II
PAGET S Disease of Bone. See Osteitis deformans
PAIN See also Backache, Dysmenorrhea, Headache, Sciatica under names of specific organs and regions as Abdomen
  Abdominal Gas See Flatulence
  Burning See Causalgia
  in extremities in parkinsonism, 280
  Precordial See Angina Pectoris, Thrombosis coronary
  referred fibromyositis and, [Slobe] 803—ab
  Relief of See also Anesthesia
  relief of cortical excisions for, [Horrax] 273 —ab
  relief of unbearable pain by psychosurgery, [Watts] 891—ab
  treatment induced prolonged sleep, [Kaminski] 431—ab
PAINT See Lacquer
PALATE exercises after bulbar poliomyelitis, 434
PALESTINE, foreign letter from, 496
PALLEN, MONTROSE A accused of poisoning water in Croton reservoir in 1865, A M A resolution protesting action, [Fishbein] ★24
PALSY See Paralysis
PAN AMERICAN See also Inter-American, Latin America, South America
  Congress of Ophthalmology (3rd), 118, 492
  Congress on Tuberculosis, 563
  Sanitary Bureau, (director retires) 639, (appointment of F L Soper) 714
PANARIS See Paronychia
PANCOAST Superior Pulmonary Sulcus Tumor. See Thorax
PANCREAS See also Diabetes Mellitus
  calculi, [Dalgaard] 806—ab
  cancer, 567
  cancer of islands of Langerhans without endocrine symptoms, [Hess] 141—ab, (correction) 337
  cystic fibrosis, [Kennedy] 648—ab
  extract (deproteinated) effect on coronary occlusion, 146
  hyperplasia o fetuses of diabetics
  inflammation E
  inflammation 1211 —ab
  Secretion See also Insulin

PANCREAS—Continued
  secretion, islet cell tumor with hyperinsulinism, [Marble] 271—ab
  surgery, [Crile] 648—ab
  tumors, argentaffin cells in, [Hultquist] 730—ab
  tumors, islet adenoma in pregnancy, [Pompen] 1317—ab
  tumors, islet cell tumor with hyperinsulinism, [Marble] 271—ab
PANCREATITIS· See Pancreas inflammation
PANHEMATOPOIESIS. See Blood formation
PANTABEE, assay of thiamine in, [Haskell] 645—C
PAPAVERINE hydrochloride to prevent posttraumatic pneumonia, [Phillips] ★161
  treatment of acute coronary occlusion, 357
PAPAYA Concentrate, Macu Brand, 264—BI
PAPER See also Articles, Newspapers
  dust, effect 435
  "White Paper" See National Health Service Act
PARA-AMINOBENZOIC ACID See Acid
PARAGANGLIOMA See Pheochromocytoma
PARALYSIS· See also Paraplegia
  Agitans See Parkinsonism
  antirabic vaccine causes, [Bussell] 728—ab
  Cerebral See also Paralysis, spastic
  cerebral palsy, Joint Committee for Research in Problems of, 1164
  cerebral palsy, new center for, N Y, 335
  complications of spinal anesthesia, [Mason] 345—C
  facial, rheumatic, [Bergstrom] 1318—ab
  General See *Dementia Paralytica*
  Infantile See Poliomyelitis
  of anterior group of muscles of leg, [Holstein] 382—ab
  of Bladder See Bladder
  peroneal palsy from crossing the legs, [Nagler & Rangell] ★755
  progressive bulbar palsy, treatment, 1044
  Spastic See also Paralysis, cerebral
  spastic, rehabilitation hospital for children with, 256
PARANASAL Sinuses See Sinusitis, Nasal
PARAPLEGIA centers of Veterans Administration, 1020
  traumatic, physical therapy, [Guttmann] 1242—ab
  traumatic, treatment, 495
PARASITES, Intestinal See Ancylostomiasis
PARATHYROID, hyperparathyroidism (primary) [Norris] 63—ab
  tumor, adenoma (recurrent), [Burk] 1314—ab
PARENTHOOD, Planned· See Contraception
PARENTS See Maternity
PARESIS See Dementia Paralytica
PARESTHESIAS, rheumatic cervical perispondylitis, [Belart] 141—ab, (correction) 337
PARIN, VASSILY V, visiting scientist returns to Moscow, 638
PARINAUD'S Conjunctivitis: See Leptotrichosis
PARKINSONISM, muscular cramps and pain in extremities in, 280
PARONYCHIA, panaris, [Domanig] 504—ab
PAROTITIS, EPIDEMIC (mumps), agglutination test for antibody, [Burnet] 67—ab
  edema of anterior part of body in, [Chrysanthis] 354—ab
  orchitis, [Nixon] 1243—ab
  vaccination with formolized virus, [Stokes] 501—ab
  vaccine (*improved*) 939—E
  vaccines, [Habel] 427—ab
  virus, attenuation of virulence with retention of antigenicity of, [Enders] 350—ab
PARRISH, EDWARD, frauds perish, 57—BI
PARROT Fever See Psittacosis
PARTURITION· See Labor
PASTEUR, LOUIS, death (50th anniversary), 262; [Fishbein] ★466
  exhibit of scientific work, 262
PASTEURELLA Tularensis Infection· See Tularemia
PASTEURIZATION: See Milk
PATENT MEDICINES See Nostrums
PATENTS and A M A, [Fishbein] ★471; ★770; ★839, ★843
  continued need for, 184—OS
  medical, (Council discusses), 850
PATHOLOGY See also Disease
  American Board of. See Amelcan Board
  Army Institute of, (new director R O. Dart) 252, (study on sudden death in young men) 325—E
  clinical, 213
  residency and fellowship programs must provide for training in, 697—E, 717
PATIENTS· See also Disease; Medical Service; Surgery, under names of specific disease as Scarlet Fever
  bedridden, physicians accused of neglecting exercise, 699—OS
  Convalescing See Convalescence
  Early Rising after Operation See Convalescence
  Hospital See Hospitals
  Transport of. See Ambulances
PAVLOV, IVAN, studies on conditioned reflexes, 713
PAY See Wages
PEARS, homogenized, Libby's, 937
PEDIATRICS See also Children, Infants
  American Academy of, (study of child health service, A M A Reference Committee report), 40
  basic research needs in nutrition, [Jeans] ★245
  psychologic and psychiatric aspects of practice of, 1294
  teaching, cooperative plan with U of Michigan, 706
PEDICULI· See Lice
PEDICULOSIS of head, DDT for, in children, [Kaiser] 130—ab, [Cowan] 1305—ab
  treatment, DDT for, 733
PEIPING Union Medical College, Rockefeller Foundation terminates grants to, 564
PELLAGRA glossitis, folic acid for, [Spies] 425—ab
  in American war prisoners in Philippines, [Lewis] 501—ab
PELVIS subtrochanteric osteotomy in poliomyelitis [Irwin] ★231
PENICILLIN, blood *coagulating* power, [Fradà] 354—ab, [Pelz] 800—C
  blood levels, 145; (emulsions will prolong) [Putnam] 1174
  calcium in wax and oil, N N R, (Abbott, Merrell, Wyeth) 477; (Premo) 1009
  calcium troches, N.N R., (description) 851; (Abbott; Schenley; Squibb, Upjohn) 851; (Bristol Laboratories) 1281
  caronamide to inhibit excretion, clinical research on new drug, 1294
  effect compare with brain tissue extract on staphylococcus infections, [Nutini] 803—ab
  effect on Endameba histolytica, [Knoll] 1242—ab
  effect on vaccinia virus, [Gohar] 651—ab
  in beeswax and peanut oil, [Hirsh] 1309—ab
  inactivated, staphylococci inhibited by, [Hunwicke] 727—ab
  N N R tablets buffered (description) 851; (Abbott, Bristol, Schenley, Squibb), 851
  Nobel Prize winner in Italy Dr E B Chain, 1030
  pure in ophthalmology, [Sorsby] 428—ab
  sodium, N N R, (Schenley) 513
  solutions, stability of, treated with formaldehyde, 420
  stored potency against hemolytic staphylococci, [Pelczar] 720—ab
  supply, removed from all distribution control, 112—OS
  toxicity after effects of prolonged use, 358
  toxicity, contact dermatitis, [Friedlaender] 269—ab
  toxicity, delayed allergic reaction procaine intravenously for [Rosellini] 204—ab
  toxicity, in syphilis treatment, [Hill] 1244—ab
  toxicity, jaundice [Hughes] 352—ab
  toxicity, pseudoglycosuria, [Boldyreff] 715—C
  toxicity, sensitivity to sulfathiazole and *not* to penicillin [Abram] 1301—C
  toxicity, sensitization, give penicillin after? 435
  toxicity, serum sickness, procaine intravenously in, [Dressler & Dwork] ★849 [Abram] 1301—C
  toxicity, urticaria, benadryl for, [Willcox] 428—ab, [Callaway] 891—ab
  toxicity, urticaria, benadryl and pyribenzamine for, [Pillsbury & others] ★1255
  toxicity, urticaria, procaine for advise caution [Waldbott, Abram] 1301—C
  Treatment See also Abscess, peritonsillar; Agranulocytosis Acute, Angina, Vincent's; Bartholin Gland; Breast abscess; Breast inflammation; Bronchiectasis, Diphtheria; Endocarditis, Frambesia, Gonorrhea, Infections, Intestines obstruction, Jaundice, spirochetal, Leptospirosis canicola; Liver abscess, Neurosyphilis, Otitis Media; Otorhinolaryngology, Pneumonia, Psittacosis, Relpasing Fever; Rheumatism; Scarlet Fever, Skin disease; Streptococcus carrier; Syphilis, Tetanus, Throat infections, Tonsils, infected; Urinary Tract infections, Wounds
  treatment, cellular recovery after in endocarditis, [Moore] 724—ab
  treatment, intra-articular, in arthritis, [Tucker] 892—ab
  treatment, intraocular injections, [Van Heuven] 70—ab
  treatment, intrapleural, in tuberculosis and empyema, [Callahan] 138—ab
  treatment of endocarditis, effect of anticoagulants on, [Priest] 427—ab
  treatment of endocarditis, large embolism during, [Frada] 354—ab
  treatment of scarlet fever; compared with convalescent serum and sulfonamides, [Hoyne & Brown] ★661
  treatment, ointment, topical treatment with, [Wright] 1305—ab
  treatment, oral in gonorrhea, [Bushby] 574—ab
PENICILLIN—Continued
  treatment (X, G and commercial) of scarlet fever, compared with antitoxin and symptomatic therapy, [Hirsh & others] ★657
  treatment plus fever in neurosyphilis, [Rose & Solomon] ★6
  treatment plus sodium para-aminohippurate and heparin in endocarditis, [Loewe] 61—ab
  treatment plus sulfadiazine of pneumonia, [Dowling] 1171—ab
  treatment plus sulfadiazine, routine use in appendectomy, [Griffin & others] ★907
  treatment plus sulfonamide for peritonitis, [Brown] 1241—ab
  treatment plus sulfonamide for pneumococcic meningitis in children, [Ross] 892—ab
  treatment plus sulfonamide of trachoma, [Lavery] 67—ab
  treatment, resistance, [Dowling] 270—ab
  treatment, resistance (acquired) of Treponema pallidum, 1282—E
  treatment, symposium on, in British Medical Bulletin, 478—E
  treatment vs. bacitracin, [Meleney & Johnson] ★680
PENICILLIUM notatum, filtrates of, antidotal property, 33—E
  notatum Westling, notalysine, [Hutter] 1247—ab
PENIS· See also Circumcision
  angulation due to short frenum, 812
  Erection of See Priapism
  tuberculosis, [Lewis] 965—ab
PENTAMIDINE and stilbamidine plus diet low in protein in myeloma, [Snapper] ★156
PENTAQUINE, Council name for SN 13276, **132:** 990, Dec 21, 1946
PENTOBARBITAL, convulsive seizures after withdrawal, [Osgood] ★104
PENTOTHAL SODIUM, intravenous, for oral surgery, 812
  oxygen-curare for muscular relaxation in *abdominal surgery, [Davison] 1245—ab*
PEOPLE. See Population
PEPTIC ULCER, complications· diabetes, *[Wood] 1240—ab*
  diagnosis, blood bilirubin to differentiate from portal cirrhosis, [Navarro] 351—ab
  diagnosis (roentgen) of duodenal ulcer, [Brown] 1245—ab
  diagnosis (roentgen), perforation during, [Schilling] 273—ab
  diagnosis, roentgen and clinical aspects, [Krisnapoller] 430—ab
  electrocardiographic findings, [Ørning] 208—ab
  hemorrhage from, [Heuer] 725—ab
  hemorrhage from duodenal ulcer, amaurosis in, [Forgarasi] 1248—ab
  hemorrhage from duodenal ulcer, optic nerve atrophy after, [Levatin] 1306—ab
  in aged, [Kiefer & McKell] ★1037
  in South Australia, [Linn] 728—ab
  incidence in hematemesis, [Cluer] 274—ab
  nutritional deficiencies and 263
  perforated gastroduodenal ulcer, [Baritell] 1314—ab
  perforating gastric or duodenal ulcer, 1936-1944, [Saxholm] 1318—ab
  perforation during roentgen examination, [Schilling] 273—ab
  perforation of duodenal ulcer, [Graham] 647—ab, (amaurosis in) [Forgarasi] 1248—ab
  surgical treatment, dorsolumbar sympathectomy aggravates gastric ulcer, [Blegen & Kintner] ★1207
  surgical treatment, gastric neurectomy, [Bradley & others] ★459
  surgical treatment, in gastric and duodenal ulcers, [Hinton] 500—ab
  surgical treatment, subtotal *gastrectomy for* duodenal ulcer, [Allen] 132—ab
  surgical treatment, transthoracic vagotomy, *[Ruffin] 1307—ab*
  surgical treatment, transthoracic vagus resection, [Smith] 1313—ab
  surgical treatment, vagotomy, 181—E; [Bradley & others] ★459; [Miller & Davis] ★461; [Moore & others] ★741
  surgical treatment, vagotomy, insulin test for intact nerve fibers, [Hollander] 1307—ab
  treatment, aluminum hydroxide gel and magnesium hydroxide, [Jankelson] 1240—ab
  treatment, enterogastrone, [Greengard] 1307—ab
  treatment, protein hydrolysates and dextrimaltose, [Co Tui] 1312—ab
  treatment, protein hydrolysates, [Ruggiero] 272—ab
PERFORATION: See Ear; Peptic Ulcer
PERIARTERITIS nodosa, etiologic role of allergy in, 620—E; 776—E
PERIODICALS: See Journals
PERITONEUM, dialysis for anuria, [Reid] 503—ab
  irrigation in acute renal failure, [Fine] 426—ab; [Goodyear & Beard] ★1208
  rebound tenderness in abdominal disease and *Rovsing's sign*, 508
  tumors, primary retroperitoneal, [Donnelly] 649—ab

PERITONITIS, control with penicillin and sulfadiazine; experiments with streptomycin, [Griffin & others] ★907
PERNICIOUS Anemia: See Anemia, Pernicious
PERSONALITY: See Constitution; Psychosomatic Medicine
PERSPIRATION: See Sweat
PERTUSSIS: See Whooping Cough
PETHIDINE: See Meperidine
PETIT MAL: See Epilepsy
PHANTOM Limb: See Amputation
PHARMACEUTICALS: See also Drugs; Pharmacology; Pharmacopeia; etc.
  national benefits, scheme proposed, Australia, 1031
PHARMACISTS: See also Medicolegal Abstract *at end of letter M*
  appointments, examination for, 409
  statistics on, in all hospitals, ★1077
PHARMACOLOGY: See also Drugs
  residency and fellowship programs must *provide training in,* 697—E; 717
PHARMACOPEIA: See *also* Formulary
  U. S., [Fishbein] ★175; ★176
  U. S., Convention, 1911, [Fishbein] ★765
PHARMACY, A. M. A. Council on: See American Medical Association
PHARYNGITIS, of unknown cause, [Commission on Acute Respiratory Diseases] ★588
  recurrent, 358
PHARYNX: *See Nasopharynx*
PHENARSINE: See Oxophenarsine
PHENOBARBITAL, N.N.R., (Miller) 543
  convulsive seizures after withdrawal, [Osgood] ★104
  Phenolix Elixir, 422—BI
  sensitivity to amigen, [Ratner] 497—C
  treatment of epilepsy with hydantal, [Von Hagen] 889—ab
PHENOLIX Elixir Phenobarbital, 422—BI
PHENYL MERCURIC borate toxicity, used as preservative for plasma? 214
PHEOCHROMOCYTOMA of adrenal medulla, cause of malignant hypertension, [Washington] 724—ab
  of adrenals, [Espersen] 142—ab
PHI Delta Epsilon Lecture: See Lectures
PHILATELY: See Postage Stamps
PHILIPPINE Journal of Surgery: See Journals
PHLEBITIS: See Pylethrombophlebitis; Thrombophlebitis
PHLEBOTHROMBOSIS, [Aycock & Hendrick] ★1259
  in gynecologic patients, [Meigs] 1035—ab
  treatment, [Allen & others] ★1268
PHLEBOTOMY, for venous thrombosis and pulmonary embolism, [Allen & others] ★1268
PHONOGRAPH recordings of cardiovascular and respiratory sounds, [Stokes] 429—ab
PHOSPHATASE in Blood: See Blood
PHOSPHORUS necrosis, extermination of "phossy jaw," 643
  radioactive, external use, [Low-Beer] 65—ab
  radioactive, for primary polycythemia, [Erf] 62—ab
PHOTOELECTRIC sulfobromophthalein sodium liver function test, [Mateer & others] ★913
PHOTOFLUOROGRAPHY in tuberculosis case finding, *[Birkelo & others]* ★359; 399—E; [Kovnat] 963—C
PHOTOGRAPHY: See also Microfilms; Moving Pictures
hospitals, ★1077
it, sensitivity to
ophyll
Handicapped
in final months
of the war, 854—E
PHYSICAL EDUCATION and Training: See Exercise; Health education
PHYSICAL EXAMINATION: See also Physical Fitness
  annual, for U. S. Army personnel, 47
  Industrial: See Industrial Health
  of school children, 1292
  of selective service registrants in final months of war, 854—E
PHYSICAL EXERCISE: See Exercise
PHYSICAL FITNESS: See also Physical Defects
  A. M. A. project, 945—OS
  Joint Committee report, 44
PHYSICAL MEDICINE: See *also* Physical Therapy
  A. M. A. Council on: See American Medical Association
  New Horizon (motion picture review), 346
PHYSICAL REHABILITATION: See Rehabilitation
PHYSICAL THERAPY: See also Cold, therapeutic use; Diathermy; Heat, therapeutic use; Physical Medicine; Radium; Roentgen Therapy
  in traumatic paraplegia, [Guttmann] 1242—ab
  technicians, school for, approved by A. M. A., ★1149
profession of; Surgeons
  accused of neglecting exercise for bedridden patients, 699—OS

PHYSICIANS—Continued
  advertising by, [Fishbein] ★838
  American College of, research fellowships awarded, 492
  A. M. A. Judicial Council asked to define, 1924, [Fishbein] ★933
  American, Serving Overseas: See World War II
  automobile priorities for (Joint Committee report), 44
  avocations, American Physicians Literary Guild, 257; 1165
  avocations, bridge champion, 788
  avocations, Physicians Art Association, Mass., 1023
  Awards to: See Prizes; World War II, Heroes
  choice of, freedom by insured, in 1917, [Fishbein] ★841
  Commissions (military): See Army, U. S.; Navy, U. S.; World War II
  Consulting: See Consultants
  Courses for: See Education, Medical, graduate
  cultists relationships, [Fishbein] ★100; ★175; ★924; ★933
  Danish, Domus Medica, 961
  Deaths: See also Deaths at end of letter D
  deaths, editorial first published in J. A. M. A. Jan. 9, 1904, [Fishbein] ★612
  deaths in 1946, 108—E
  Desk Reference of Medical Economics, [Rothschild] 124—C
  diet cards available for those interested in infant and child feeding, W. Va., 116
  Directory of: See American Board of Ophthalmology; American Medical Directory; American Medical Association, Directory Department
  Distinguished Service Medal: See World War II, *Heroes*
  Education of: See Education, Medical
  Ethics: See Ethics, Medical
  Expert Witness: See *Evidence*
  Fees: See Fees
  Fellowships: See Fellowships
  Fellowships in A. M. A.: See American Medical Association
  German, atrocities committed by, Dr. Ivy's report, A.M.A. Judicial Council report, 35; [Wertham] 645—C
  Graduate Courses; Work: See Education, Medical, graduate
  Graduate Work: See Education, Medical
  group insurance as it affects, [Rees] ★613
  Heroic Action: See World War II, Heroes
  Honorably Discharged: See World War II, medical officers
  Hospital: See Hospitals
  Impostors Preying on: See Impostors
  in civilian practice during war; A. M. A. Committee questionnaire, 480—E
  in politics, physician and dentist U. S. legislators, 956
  in politics, physicians in National Assembly, Turkey, 1236
  Income: See Fees; Wages
  Income Tax: See Tax
  Industrial; Industrial Relations: See Industrial Health
  interest in his medical society, what technic most successful, [various authors] 629—ab
  investments, [Smith] ★27
  join with lawyers in combating court problems, 631—OS
  Killed in Action: See World War II, Heroes
  labor attempts to coerce to join a union, England, 121
  Lectures Honoring: See Lectures
  Licensing: See Licensure
  location for practice of physician veterans, 944—OS
  location of, at every crossroad not the solution, [Shoulders] 866—*ab*
  locum tenens, Denmark, 123
  Medals for: See Prizes; World War II, Heroes
  medical delegation visits Buenos Aires, 882
  Medical Practitioners Union, and National Health Service, 495
  Medical Responsibility: See Medical Jurisprudence; Medicolegal Abstracts at end of letter M
  Memorial: See also Fellowships; *Lectures*; Physicians, monuments; Prizes
  memorial fund, Bleckwenn, 1230
  memorial, Gorgas, 1923, [Fishbein] ★931
  memorial, Meek (Walter Joseph) Fund aid for superior students, 492
  memorial, Moorehead (Frederick B.) fund, 1291
  memorial, *S. S. Frederick Banting,* a liberty ship, 1294
  microfilm service by Army Medical Library available to, 789
  Military Service: See World War II
  Monument: See also Physicians memorial
  monument to, Benjamin Rush, [Fishbein] ★311; ★315; ★316
  monuments, battle of, [Fishbein] ★466
  National Council of Order of Doctors and old age insurance, France, 1234
  Negro, admission of, to A. M. A. House of Delegates, [Fishbein] ★101
  nonimmigrant entry *authorized* for, Puerto Rico, 638
  office rents, oppose increase in, Ore., 1229
  Payment of: See Fees
  Portraits: See Portraits (cross reference)

PHYSICIANS—Continued
  positions for, Kelleys Island needs a doctor, Ohio, 336
  positions open for research in psychiatry, 337
  positions open, in public health, New York State, [Amos] 124—C
  positions open, Psychiatric Personnel Placement Service, 117
  positions open, specialists wanted for U. S. government positions, 48
  positions open, U. S. Civil Service, 951
  Practicing: See also Medicine, practice; Physicians, supply
  practicing, general practitioners on hospital staffs, [Garlepy] 1169—C
  Practicing in Groups: See Medicine, group practice
  practicing, specialty board for general practitioners (Joint Committee report), 43; (also Indiana bylaws) 942—OS
  Prescriptions: See Prescriptions
  Prizes for: See Prizes
  Residencies: See Residents and Residencies
  responsibility of individual physician, [Sargent] 530—ab
  rural, scholarships to provide, (Ind.) 489; (Ill.) 706
  Salaries: See Wages
  Separated from the Service: See World War II, *medical officers*
  Service by: See Medical Service; Medical Service Plans; Physicians, supply
  Society of General Physicians organized, 491
  Soviet: See *under* Russia
  Specialization by: See Specialization; Specialties
  strike settled at 2 of Stockholm's largest hospitals, 421
  Supply: See *also Physicians, location*
  supply, critical shortage, U. S., 699—OS
  supply, distribution of doctors, Denmark, 961
  supply, methods of bringing and holding doctors in rural areas, [Humphrey] 778—ab; [Starr] 779—ab; [Mulholland] 861—ab
  supply, 1960 will require 27,000 additional, [Parran] ★1049
  supply, principles of retail trading areas applied to, 1011—E; [Dickinson] ★1014
  supply, shortage, Netherlands, 712
  supply, shortages of doctors, nurses and hospitals, 536—OS
  supply, Washington, D. C., 556—OS
  Swindling: See Impostors
  urged to use "plain English," 1015—OS
  veteran, (Dr. Cary, 75) 793; (50 years in practice, Pennsylvania honors) 1164; (Dr. Waggener, 94) 1228
  veteran, Dr. Cary (75th birthday) 793
  Veterans of World War II: See Veterans, physician
  War Service: See Veterans; World War II, medical officers
  welter of material aids, 1210—ab
  women, [Fishbein] ★101; ★607
  women, A. M. A. attitudes on, [Fishbein] ★26
  women, first A. M. A. member: Dr. Sarah *Hackett Stevenson, [Fishbein]* ★175
  young, tribute by Brig. Gen. Raymond W. Bliss to, 481—E
PHYSIOLOGY, residency and fellowship must provide training in, 697—E; 717
PHYSIOTHERAPY: See Physical Therapy
PHYSIQUE: See Constitution
PHYSOSTIGMINE, 533—ab
PICK-Niemann Disease: See Niemann-Pick Disease
PICRIC Acid: See Trinitrophenol
PICTURES: See Moving Pictures; Photography; Portraits (cross reference)
PIES, cream, food poisoning from, Mich., 792
PIGEONS, psittacosis in children, [Meyer & Eddie] ★824
PIGMENT: See also Dyes (cross reference)
  green, and etiology of chloroma, [Humble] 729—ab
PIGMENTATION: See also Dermatitis, lichenoid pigmentary; Melanosis; Retinitis pigmentosa
  after burns from boiling water splashed through a nylon stocking, 436
PILOCARPINE and seborrhea, 577
PILONIDAL sinus disease, management, [Rosser & Kerr] ★1003
  wound (open) healing, [Blaisdell] ★916
PILOTS: See Aviation
PINEAPPLE, homogenized, Libby's, 937
PITKIN menstruum, heparin in, for venous thromboembolic disease, [Loewe & Hirsch] ★1263
PITRESSIN treatment for hypertension, 898
PITUITARY: See also Diabetes Insipidus
  Disease: See *Acromegaly*
  growth hormone, 898
  hypertrophy and hibernation, 656
  necrosis (postpartum) with diabetes insipidus, [Spain] 727—ab
  Posterior: See also Pitressin
  posterior injection, and ergonovine, combine in same syringe? 1044
  posterior injection in prolonged labor, [Reid] 425—ab
  posterior solution, N.N.R.,

[illegible]
[illegible]
[illegible]
[illegible]
[illegible], [Plat-
[illegible]
[illegible] See Contraception
[illegible] See [illegible]; Pollen; Ragweed;
[illegible] Blood; Blood
[illegible] See Water
[illegible] See Adhesive
[illegible] infant, 121
[illegible] reactions induced by, [illegible] 721—ab
[illegible] See Purpura, thrombopenic
[illegible] use in corneal tattooing, [illegible] 358
[illegible] See Bridge
[illegible]: See Pleurisy with effusion
[illegible] penicillin in tuberculosis and [illegible], [Callahan] 138—ab
[illegible]: See Pleurisy, tuberculous
PLEURISY due to amebiasis [Carruthers] 1246—ab
  Purulent: See Empyema
  tuberculous, surgical treatment, [Harbitz] 142—ab
  with effusion indication for artificial pneumothorax? 797
  with effusion, pathogenesis, [Thompson] 887—ab
PLEUROPNEUMONIA-like organisms, relation to Reiter's disease, etc [Wallerstein] 137—ab
PLOTZ Foundation See Foundations
PLUMBISM See Lead poisoning
PLUMMER-VINSON Syndrome [Savilahti] 274—ab
PNEUMATOCELE during pneumonia in children, [Almklov] 570—ab
PNEUMOCOCCUS, factor in whole wheat bread beneficial to parasitic growth of 401—E
  Meningitis. See Meningitis
  Pneumonia: See Pneumonia
PNEUMOCONIOSIS See Pneumonoconiosis
PNEUMOGRAM See Brain
PNEUMONECTOMY See Lungs surgery
PNEUMONIA, atypical primary, [McCoy] 65—ab, [Eaton] 1303—ab
  complications, erythema multiforme exudativum, [Dingle & others] 888—ab
  epidemiologic pneumococcic, 323—E
  incidence, weekly report, Mo, 1163
  pneumatocele during, in children, [Almklov] 570—ab
  post-traumatic, after nonpenetrating lung injuries, prevent with penicillin or sulfadiazine, atropine papaverine [Phillips] ★161
  relation to Reiter's disease arthritis and colitis, [Wallerstein] 137—ab
  staphylococcic primary, penicillin for, [Davis] 1310—ab
  treatment, osteopathic challenge by George A Still in 1922, [Fishbein] ★929
  treatment, penicillin and sulfadiazine, [Dowling] 1171—ab
  tularemic primary, streptomycin for [Smith] 205—ab
  Virus See Pneumonia, atypical primary
PNEUMONECTOMY See Lungs, surgery
PNEUMONOCONIOSIS, effect of paper dust, 435
  asbestosis, histology of, [Noro] 652—ab
  in anthracite miners, [Gooding] 894—ab
  in cutters of fireproof brick, 644
  in dock workers, [Dunner] 428—ab
  silicosis, 643
  silicosis and hematogenous tuberculosis, [Zollinger] 1038—ab
  silicosis, hematologic study in [Heimann] 1244—ab
  thresher's lung, [Tornell] 504—ab
PNEUMONOLYSIS: See Lungs surgery
PNEUMOTHORAX, spontaneous simple, [Niehaus] 1304—ab
PNEUMOTHORAX, ARTIFICIAL See also Tuberculosis of Lung
  pleurisy with effusion indication for? 797
  results, [Branday] 888—ab
POISON Ivy See Rhus
POISONING See also Arsenic, Bromide, Lead, Mercury
  acute, value of gastric lavage in, 545—E, (technic) [Kantor] 1238—C
  Food See Food
  Industrial See Industrial Dermatoses, Industrial Diseases
POLAND, Swedes help fight venereal disease in, 1030
POLIOENCEPHALITIS hemorrhagic, Wernicke's encephalopathy, [de Wardener] 1246—ab
POLIOMYELITIS, abortive; diagnosis, [Bridge] 271—ab
  bulbar, exercise for palate after, 434
    aic for patients, Cal, 636
    idemic in New Haven, [Wenner] 1314—ab
    demic in 1891, [Fishbein] ★386
POLIOMYELITIS—Continued
  [illegible] 1946, 709
  [illegible], water in [Scobey] 721—ab
  Georgia Warm Springs Foundation, 1163
  immunity (clinical), [Bridge] 570—ab
  National Foundation for Infantile Paralysis, (March of Dimes) 117, 185—OS, (appoint H. M Weaver research director) 257, (research meeting) 492, (grant to train medical record librarians) 622—E, 639, (grant for research on muscle physiology) 792
  preparalytic, gelsemium in, [Holman] 136—ab
  seminar on, Nebr, 490
  subclinical, [Casey] 886—ab
  subclinical, spinal fluid protein in, [Andelman] 65—ab
  symposium, Hennepin County Medical Society, 1163
  training conferences on, 492
  transmission, [Van Rooyen] 428—ab
  transmission to rodents, 1217—E
  treatment, subtrochanteric osteotomy, [Irwin] ★231
  vaccine, Sweden, 421
  virus, fatal infection in laboratory worker, [Wenner] 1303—ab
POLITICS, Physicians in: See Physicians
POLLEN desensitization in pregnancy, 1174
  extracts, research on, grant by Marcelle cosmetics, 878
POLLINOSIS See Hay Fever
POLYARTHRITIS See Arthritis
POLYCYTHEMIA, primary, radiophosphorus for, [Erf] 62—ab
POLYURIA: See Diabetes Insipidus
POPULATION See also Vital Statistics
  Policy Commission, Japan's eugenics program, 185—OS
PORENCEPHALY, [Pendergrass] 130—ab
PORK. See also Trichinosis
  best animal feeds, effect on milk supply, 775—E
PORPHYRIA, acute, [Jorgensen] 1316—ab
  acute, fatal case, [Abbott] 723—ab
  chronic, complicating pregnancy, [Linas & others] ★105
  neuropsychiatric aspects, [Schneck] 202—ab
PORTAL VEIN, obstruction in diabetic child, 279
  pyelothrombophlebitis, streptomycin for, [Wishart & Peterson] ★539
PORTRAITS See under names of individuals as Guerry, McClaran
POSITION in Space See Posture
POSITIONS Open See Physicians, U S Government
POST products, attacks centered on J A M A editor Dr Simmons, in 1910 [Fishbein] ★762
POSTAGE STAMP See also Mail
  honors A M A centennial, 1219—OS
POSTGRADUATE *Medicine* See Journals
  Schools See Schools, Medical
  Work See Education, Medical, graduate
POSTMORTEM See Autopsies, Death
POSTOPERATIVE See Surgery
POSTPARTUM See Puerperium
POSTURE Early Rising after Operation, etc: See Convalescence
  peroneal palsy from crossing legs, [Nagler & Rangell] ★755
  position of relief in intestinal strangulation, [Evans & Bigger] ★514
POSTWAR Medical Service, Committee on: See American Medical Association Joint Committee for Coordination of Medical Activities
POTASSIUM bitartrate, dusting powders for rubber gloves, 1218—E
  intoxication, [Finch] 61—ab
  salts treatment of myasthenia gravis, 1252
POWDER See Dusting Powder
POWER See Energy
  Atomic See Atomic Energy
POWERS PHILIP N, on Presidential Scientific Board 185—OS
POX Disease (new): See Rickettsialpox
PRACTITIONERS: See Physicians practicing
  Drugless See Cults
PREFRONTAL Leukotomy See Brain surgery
PREGNANCY See also Fetus, Impregnation; Labor, Maternity, Obstetrics, Placenta; Puerperium, Reproduction, Medicolegal Abstracts at end of letter M
  blood (maternal-fetal), oxygen pressure gradient [Barron] 207—ab
  blood picture in 9th month, 1254
  complications adenoma of islands of Langerhans, [Pompen] 1317—ab
  complications amebiasis, 1042
  complications brucellosis, 357
  complications diabetes, fetal hyperplasia of Langerhans islets, [Hultquist] 1318—ab
  complications endometriosis, 436
  complications: epilepsy, [Burnett] 1037—ab
  complications. heartburn, [Roth] 427—ab
  complications hyperthyroidism, thiouracil for, 73
  complications: porphyria (chronic), [Linas & others] ★105
  complications: regional enteritis, [Williams] 966—ab
  complications rubella and chickenpox, defects in child, [Swan] 1316—ab
PREGNANCY—Continued
  complications: rubella; congenital deafness in child [Hopkins] 268—ab; [Clayton-Jones] 1316—ab
  complications. rubella; deaf-mutism in child, 1012
  complications: thyrotoxicosis, 655
  complications: toxoplasmosis probably not recur in subsequent pregnancies, 970
  complications uterine contractions painful, 214
  diagnosis, breast striae, 358
  diagnosis, melanophore reaction, [de Bourgraaf] 730—ab
  diagnosis, metreurynter in uterine bleeding; positive Aschheim-Zondek test, 74
  diet deficiency in, [Vilter] 206—ab
  diet, nutrition during, [Keitel] 345—C
  ectopic, fetal bones in bladder, [Forshaw] 429—ab
  ectopic in cervical mucosa, [Schneider] 131—ab
  ectopic (tubal), conservative surgery in, [Graham F] 730—ab
  electric shock during, cause fetal death? 280
  Interruption of See Abortion
  interval (prolonged) between, 578
  intrauterine respiration of fetus, [Windle & Becker] 125—C
  Multiple See Twins
  pollen desensitization in, 1174
  Protection from See Contraception
  Rh factor, 577
  roentgen therapy during, cause congenital malformations, [Keitel] 716—C
  sulfonamides used in, effect on fetus, 970
  Toxemia of See Eclampsia
  weight gain in, vs weight of newborn [Klein] 129—ab
PREMEDICAL Work See Education, Medical
PREPAREDNESS, Medical See World War II
PREPAYMENT Plans See Hospitals, expense insurance, Medical Service Plans, Medicolegal Abstracts at end of letter M
PREPUCE See Circumcision
PRESCRIPTION: See also Glasses, Medicolegal Abstracts at end of letter M
  liquor, 1923, [Fishbein] ★931
  warnings on labels of prescribed drugs, (Council discusses), 850
PRESERVATIVE: See Serum plasma; Spermatozoa, Tissues
PRESIDENT'S Atomic Energy Commission, 327—OS
  Reorganization Act, need for clarifying lobbying provisions of, 112—OS
PRESS: See Newspapers
PREVENTIVE MEDICINE See also Immunization, Vaccination
  department aid, Ohio, 336
PRIAPISM in leukemia, dicumarol contraindicated, 73
PRIORITIES AND ALLOCATIONS: See also Automobiles
  streptomycin, allocation to France, 1234
  streptomycin allocation to Veterans Administration increased, 787—OS
PRISONERS of War See World War II, prisoners
PRIVILIGED COMMUNICATIONS See Medicolegal Abstracts at end of letter M
PRIZES See also Fellowships; Lectures; Scholarships
  Albert Medal, 878
  Alvarenga, 882
  American Association for Advancement of Science, 416
  American Institute of Nutrition Award, 51
  American Pharmaceutical Manufacturers Association award to Mayo Foundation, 337
  American Women's Association Medal, 256
  Awards for Distinguished War Service See World War II, Heroes
  Borden Awards, 794
  Bronze Star See World War II, Heroes
  Capps (Joseph A), 637, 1292
  Crane, to discover cause and cure of poliomyelitis, [Fishbein] ★841
  Doyne (R W) Memorial Medal, 706
  Fulton County Medical Society, to encourage writing, 1227
  Gibbs (Edward N) Memorial, 415
  Gibbs (Willard), 878
  Hoover Medal, 185—OS
  Jefferson Medical College awards to students, 563
  Jeffries Award, 408
  Kappa Sigma Fraternity, 51
  Kober (George Martin), 1015—OS
  Lasker Award of Planned Parenthood Federation, 337
  Mississippi Valley Medical Society, essay contest, 191
  National Safety Council traffic safety awards, 1294
  National Society for Prevention of Blindness, (for paper on glaucoma) 258
  Nobel, (age of winners), 296—ab (winners for 1946) 191, (Dr. Chain in Italy) 1030
  Norton Medical Award, 492
  Order of the Vasa (Swedish), 1230
  Phi Lambda Kappa, 708
  Reed (Walter) Medal, 117
  Schering Award, 956

PRIZES—Continued
  Sugar Research Foundation, 52
  Tulsa Civil Service awards, 1164
  West Virginia Cancer Society Inc, essay contest 415
PROCAINE HYDROCHLORIDE, intravenous, *for asthma, [Durieu] 729—ab*
  intravenous for penicillin "serum sickness" reaction, [Rosellini] 201—ab, [Dressler & Dwork] *819 (warn of danger) [Abram, Waldbott] 1301—C
  sympathetic block in local shock, [Thomson] 66—ab
PROCTALGIA See Rectum
PROCTOLOGY, interpretation of ulcerative colitis [Kleckner] *998
PROCTOR Lecture See Lectures
PROFESSION See Medicine, profession of
PROFESSORS See also Teachers
  age limits Italy, 880
  retirement age (65), Buenos Aires, 196
PROGESTERONE control of menorrhagia, [Greenblatt] 723—ab
PROMIN treatment of leprosy, 46—OS, [Wharton] 967—ab
  treatment of scleroderma, [Wuerthele] 1312—ab
PROMIZOLE, treatment of leprosy, 46—OS
PROPRIETARIES, advertising, in J A M A, [Fishbein] (in 1894) *390, *391, (in 1900) *534, (in 1905-1906) *681, *686, (in 1910) *764
  Proprietary Association of America, enemy of A M A, [Fishbein] *686
PROPYL ALCOHOL See Isopropyl Alcohol
PROPYLENE GLYCOL, *for disinfecting purposes* 696—E
PROPYLTHIOURACIL, treatment in hyperthyroidism, [Astwood] 500—ab 544—E
  treatment in thyrotoxicosis, [Reveno] *1190
PROSTATE, cancer and vesical cancer, 279
  cancer estrogens for [Fergusson] 69—ab, [Weijtlandt] 503—ab
  cancer, ethinyl estradiol for [McCrea] 965—ab
  cancer, prostatic phosphatase in serum, [Herbert] 69—ab
  cancer, skeletal metastases with myelofibrosis, [Bersack] 131—ab
  hypertrophy or cancer, vasectomy to prevent 358
  Inflammation See Prostatitis
  Surgery See Prostatectomy
PROSTATECTOMY in tenth decade, [Frater] 69—ab, [Scholtz] 503—ab
  suprapubic, thrombin and fibrin foam in, [Quinby] 203—ab
PROSTATITIS treatment, streptomycin, 855—E
  trichomonas, 733
PROSTHESIS See also Limbs Artificial
  experiments and training in making, 253
PROSTIGMINE. See Neostigmine
PROSTITUTION, Army and Navy merge their drive against vice, 112—OS
PROTEIN See also Meat
  Bence-Jones in multiple myeloma, [Bayrd & Heck] *150
  biochemistry of, recent developments, Netherlands 56
  Deproteinated Pancreatic Tissue See Pancreas
  diet high in, effect on bends, chokes, etc, [Burkhardt & others] *374, *376
  diet low in, for multiple myeloma, [Snapper] *157
  Hydrolysates See also Amigen
  hydrolysates and dextri maltose in peptic ulcer, [CoTui] 1312—ab
  hydrolysates in myasthenia gravis, 1252
  hydrolysates in peptic ulcer [Ruggiero] 272—ab
  in Blood See Blood
  in Spinal Fluid· See Cerebrospinal Fluid
  in Urine See Albuminuria
  nitrogen balance 247—E
  Sensitivity to See Anaphylaxis and Allergy
PROTEOSE, urinary, treatment of allergy, *[Rhoads] 135—ab*
PROTEUS and paracolon cultures, urea medium to differentiate [Christensen] 136—ab
  OX strains, specificity of Weil-Felix reaction, 358
  vulgaris urinary tract infection, streptomycin for, [Adcock & Plumb] *579
PROTHROMBIN See Blood prothrombin
PRURITUS ani neurogenic, [Granet] 126—ab
  generalized 812
  relief by biliary drainage, [Varco] 1314—ab
PSEUDOGLYCOSURIA in patients given penicillin, [Boldyreff] 715—C
PSEUDOHEMOPHILIA [Perkins] 349—ab
  possible case of? 1320
PSEUDOMONAS aeruginosa urinary tract infection, streptomycin for, [Adcock & Plumb] *579
PSITTACOSIS, [Meyer & Eddie] *822, (diagnosis in children) *824
PSYCHIATRY See also Hospitals, psychiatric, Mental Disorders, Mental Hygiene, Neuropsychiatry, Psycho—
  alcohol problem and, 561
  American Board of See American
  casualties (war), high incidence [Hanley] 314—C
PSYCHIATRY—Continued
  clinics for children, 878
  diagnosis, methedrine in [Simon] 724—ab
  graduate training, Pa, 1024
  pavilion opened N Y C, 637
  Personnel Placement Service, 117
  Psychiatric Foundation, function, 878
  research, positions open, 337
  sense and nonsense, [Burlingame] *971
  social workers institute, 413
PSYCHIATRISTS confer at War Department, 408
  National Advisory Mental Health Council advocates training 600, 405—OS
  positions open, 877
PSYCHOANALYSIS, Chicago Institute for, research, 1023
PSYCHOANALYSTS, congress of, Italy, 881
PSYCHOLOGY, factors in obesity, [Freed] *369; [Johnson] 1238—C
  of tuberculous, [Day] 428—ab
PSYCHONEUROSIS See also Neurosis
  treatment, electrical convulsions, [Milligan] 68—ab
PSYCHOPATHIC Hospitals See Hospitals, psychiatric, Hospitals, state
PSYCHOSES See Mental Disorders
PSYCHOSOMATIC disorders, ocular symptoms [Harrington] *669
  medicine, in neurology, [Wilson & Rupp] *509
PSYCHOSURGERY See Brain surgery
PUBLIC Health See Health
  Health Nurses Nursing See Nurses Nursing
  relations and medical profession, [Swart] 554—ab
  relations, how can local societies promote? [various authors] 628—ab
  Schools See Schools
  Speaking See Speakers
PUPILS *See Children, school*
PUERPERIUM, blood picture in, 1254
  complications acute mastitis, penicillin for, [Taylor] 428—ab
  early rising, [King] 129—ab
  hemorrhage, (postpartum) [Odell & others] *735
  infectious mononucleosis in [Trincao] 142—ab
  pituitary necrosis postpartum and diabetes insipidus, [Spain] 727—ab
PUERTO RICO, medical activities, A M A resolutions on inclusion in JOURNAL, 40
PULLMAN Cars See Railroads
PULMONARY See Lungs
  Embolism See Embolism
  Tuberculosis See Tuberculosis of Lung
PULMONARY VALVE, gonococcic endocarditis of, penicillin for, [Myers] *1205
  stenosis (congenital), surgery for, [Blalock] 426—ab
PULSE rate, effect of high altitude flight, [Behnke] *450
PURPURA, hereditary hemorrhagic thrombasthenia, [Perkins] 349—ab
  thrombopenic, after rubella, [Magnusson] 968—ab
  thrombopenic, BAL for, [Lockie & others] *754
PUS See Abscess, Skin infection, Suppuration, Ulcers
PUSEY, WILLIAM ALLEN and A M A Council disagreement, 1924, [Fishbein] *934
PYELOGRAPHY in hypertension, splanchnicectomy, [Nesbit] 1311—ab
PYELONEPHRITIS, treatment, streptomycin, [Adcock & Plumb] *579
PYLETHROMBOPHLEBITIS, treatment, streptomycin, [Wishart & Peterson] *539
PYOGEN, spray promoted to industry as "cold" cure (Joint Council report), 694
PYREXIA See Fever
PYRIBENZAMINE antihistamine drugs and hypertension, 812
  histamine antagonist, [Friedlaender] 1309—ab
  treatment of penicillin urticaria, [Pillsbury & others] *1255
PYRIDOXINE treatment of myasthenia gravis, 1252
PYROSIS See Heartburn

Q

Q FEVER in U S [Topping & others] *813, [Irons & Hooper] *815, [Irons & others] *819, *[Cox & others] *820*
QUARTERLY Cumulative Index Medicus See American Medical Association
QUESTIONNAIRES, A M A Committee on National Emergency Service to civilian physicians, 480—E, [Dickinson] 548—ab, 550—ab
  A M A Committee on Rural Medical Service, 941—OS
QUINACRINE HYDROCHLORIDE (atabrine)
  blood plasma concentrations, [Becker] 202—ab
  "blue halos' of cornea in atabrine workers, [Mann] 1315—ab
  fluorescence of nails 1252
  suppression of malaria, individual failures, [Bang] 132—ab
  toxicity dermatitis and aplastic anemia, [Drake] 134—ab
QUINACRINE HYDROCHLORIDE—Continued
  toxicity dermatosis, [Peterkin] 727—ab
  treatment of Giardia lamblia infection, 74
QUINIDINE, dosage schedule, 1044
  sulfate and lanatoside C for auricular flutter, [Tandowsky] 424—ab
  sulfate, treatment of acute coronary occlusion, 357
QUININE and plasmochin combined for vivax malaria, [Most] 570—ab
  anticipating need for, by A M A in 1870 [Fishbein] *101
  poisoning, value of gastric lavage in, 545—E, (technic) [Kantor] 1238—C
  Quinine Dextro 568—BI
QUINSY Sore Throat See Abscess, peritonsillar

R

RABBIT Fever See Tularemia
RABIES, [Meyer & Eddie] *822
  vaccination required for all dogs, N Y C, 116
  vaccine, complication [Zabludovich] 430—ab
  vaccine, myelitis after [Bussell] 728—ab
  warning, Chicago 561
RACES See also Indidans Negroes
  specific disease sickle cell anemia, 33—E
RADIANT *energy lamps Eastman* 1008
RADIATION See also Atomic Energy, Infra-Red Rays, Radiotherapy Radium, Roentgen Rays, Ultraviolet Rays
  Therapy See also Radiotherapy under names of specific organs and diseases
  therapy in breast cancer, [Kaplan] 1245—ab
  therapy, mechanism of effects, [Warren] *462
RADICULITIS See Sciatica
RADIO See also Television
  dramatization by CBS "A Long Life and a Merry One reviewed 1161—OS
  dramatizations costs to state societies, [various authors] 630—ab
  electrical transcriptions "Medicine serves America,' 324—E, 326
  Frequency Energy Apparatus See Diathermy
  Program by A M A See American Medical Association
  state society participation in network broadcasts [Bauer] 548—ab
RADIOACTIVE drugs tests at National Cancer Institute, 631—OS
  Elements See Atomic Energy
  Iodine See Iodine
  Phosphorus See Phosphorus
RADIOLOGY, American College of, graduate course in, 337
  Indian Journal of Radiology, new journal, 416
RADIOPHOSPHORUS See Phosphorus
RADIOTHERAPY High Dosage Treatment (motion picture review), 802
RADIUM, Belgium gift to Switzerland, 118
  Emanation See Radon
  poisoning determine radium in body to prevent [Hess] 1305—ab
  treatment, local recurrence of cancer 18 years after, [Covington] *935
RADON nasopharyngeal applicator for asthma in children, [Ward & others] *1060
  needles (interstitial) comparative value, [Taylor] 130—ab
RAGWEED dermatitis [Slater] 803—ab
  control N Y C, 1228
RAILROADS, Pullman car sanitation, Dr Hurty urges A M A action in 1901, [Fishbein] *607
RAINIER Natural Soap, 568—BI
RAMALINA reticulata Spanish moss as antibiotic, [Marshak] 1245—ab
RAMSES Vaginal Jelly also Applicator, N N R, (Schmid) 1281
RASH See Eruptions
RATION, Rationing See Food, Priorities and Allocation
RATS See also Rodents
  control program Cleveland 1024
  reproduction of, given caffeine, [Bachmann] 202—ab
RAYNAUD S DISEASE ocular symptoms, [Harrington] *672
RAYS See Radiation
RAZ MAH Templeton s, Capsules 568—BI
REBATES and fee splitting, [Patek] 715—C; (A M A action in 1924) [Fishbein] *933
RECEPTOR gradient (virus) in erythrocytes, [Burnet] 67—ab
RECORD Librarians See Medical Record Librarians
RECREATION See also Physicians, avocations
  Recreational and Occupational Therapy, (motion picture review), 802
RECRUITS See also World War II
  physical examinations of, in final months of war, 854—E
RECTOSIGMOID, cancer [Howard] 427—ab
RECTUM See also Anus Proctology
  cancer, [Howard] 427—ab
  cancer, conservative operation 55
  cancer, contact roentgen therapy, [Gros] 651—ab

PLACENTA: See also Amniotic Fluid; Fetus
  accreta, possible recurrence, 810
  tumor, Holman's gift to establish registry of hydatidiform mole, 192
PLAGUE and yellow fever, 563
  bubonic, sulfadiazine for, [Huang] 571—ab
  control by live vaccine, [Grasset] 1316—ab
  in rodents, Nebr, USPHS report, 702
  sylvatic, found in Peru, 937
  treatment, antiserum and sulfadiazine, [Platzer] 206—ab
PLANES: See Aviation
PLANNED Parenthood. See Contraception
PLANTS: See Chlorophyll; Pollen, Ragweed, Rhus
PLASMA See subheads under Blood, Blood Transfusion, Serum
PLASMOCHIN Treatment: See Malaria
PLASTER, Adhesive See Adhesive
PLASTICS. bib suffocates infant, 121
  fibrinogen, tissue reactions induced by, [Bailey] 721—ab
PLATELETS See Purpura, thrombopenic
PLATINUM chloride use in cornea tattooing, (reply) [Knapp] 358
PLAYING Cards See Bridge
PLEURA Effusion See Pleurisy with effusion
  intrapleural penicillin in tuberculosis and empyema, [Callahan] 138—ab
  Tuberculosis· See Pleurisy, tuberculous
PLEURISY due to amebiasis, [Carruthers] 1246—ab
  Purulent See Empyema
  tuberculous, surgical treatment, [Harbitz] 142—ab
  with effusion, indication for artificial pneumothorax? 797
  with effusion, pathogenesis, [Thompson] 887—ab
PLEUROPNEUMONIA-like organisms, relation to Reiter's disease, etc [Wallerstein] 137—ab
PLOTZ Foundation See Foundations
PLUMBISM See Lead poisoning
PLUMMER-VINSON Syndrome, [Savilahti] 274—ab
PNEUMATOCELE during pneumonia in children [Almklov] 570—ab
PNEUMOCOCCUS, factor in whole wheat bread beneficial to parasitic growth of, 401—E
  Meningitis. See Meningitis
  Pneumonia See Pneumonia
PNEUMOCONIOSIS. See Pneumonoconiosis
PNEUMOGRAM See Brain
PNEUMONECTOMY: See Lungs surgery
PNEUMONIA, atypical primary, [McCoy] 65—ab, [Eaton] 1303—ab
  complications, erythema multiforme exudativum, [Dingle & others] 888—ab
  epidemiologic pneumococcic, 323—E
  incidence, weekly report, Mo, 1163
  pneumatocele during, in children, [Almklov] 570—ab
  post-traumatic, after nonpenetrating lung injuries, prevent with penicillin or sulfadiazine, atropine papaverine, [Phillips] ★161
  relation to Reiter's disease, arthritis and colitis, [Wallerstein] 137—ab
  staphylococcic primary, penicillin for, [Davis] 1310—ab
  treatment, osteopathic challenge by George A Still in 1922, [Fishbein] ★929
  treatment, penicillin and sulfadiazine, [Dowling] 1171—ab
  tularemic primary, streptomycin for, [Smith] 205—ab
  Virus See Pneumonia, atypical primary
PNEUMONECTOMY See Lungs, surgery
PNEUMONOCONIOSIS, effect of paper dust, 435
  asbestosis, histology of, [Noro] 652—ab
  in anthracite miners, [Gooding] 894—ab
  in cutters of fireproof brick, 644
  in dock workers, [Dunner] 428—ab
  silicosis, 643
  silicosis and hematogenous tuberculosis, [Zollinger] 1038—ab
  silicosis, hematologic study in, [Heimann] 1244—ab
  thresher's lung, [Tornell] 504—ab
PNEUMONOLYSIS: See Lungs, surgery
PNEUMOTHORAX, spontaneous simple, [Niehaus] 1304—ab
PNEUMOTHORAX, ARTIFICIAL See also Tuberculosis of Lung
  pleurisy with effusion indication for? 797
  results, [Branday] 888—ab
POISON Ivy See Rhus
POISONING See also Arsenic, Bromide; Lead, Mercury
  acute, value of gastric lavage in, 545—E; (technic) [Kantor] 1238—C
  Food See Food
  Industrial See Industrial Dermatoses, Industrial Diseases
POLAND, Swedes help fight venereal disease in, 1030
POLIOENCEPHALITIS hemorrhagic, Wernicke's encephalopathy, [de Wardener] 1246—ab
POLIOMYELITIS, abortive; diagnosis, [Bridge] 271—ab
  bulbar, exercise for palate after, 434
  clinic for patients, Cal., 636
  pidemic in New Haven, [Wenner] 1314—ab
  demic in 1891, [Fishbein] ★386
POLIOMYELITIS—Continued
  epidemic, 1946, 709
  etiology, water in [Scobey] 721—ab
  Georgia Warm Springs Foundation, 1163
  immunity (clinical), [Bridge] 570—ab
  National Foundation for Infantile Paralysis, (March of Dimes) 117, 185—OS; (appoint H M Weaver research director) 257; (research meeting) 492; (grant to train medical record librarians) 622—E, 639; (grant for research on muscle physiology) 792
  preparalytic, gelsemium in, [Holman] 136—ab
  seminar on, Nebr, 490
  subclinical, [Casey] 886—ab
  subclinical, spinal fluid protein in, [Andelman] 65—ab
  symposium, Hennepin County Medical Society, 1163
  training conferences on, 492
  transmission, [Van Rooyen] 428—ab
  transmission to rodents, 1217—E
  treatment, subtrochanteric osteotomy, [Irwin] ★231
  vaccine, Sweden, 421
  virus, fatal infection in laboratory worker, [Wenner] 1303—ab
POLITICS, Physicians in· See Physicians
POLLEN desensitization in pregnancy, 1174
  extracts, research on, grant by Marcelle cosmetics, 878
POLLINOSIS See Hay Fever
POLYARTHRITIS See Arthritis
POLYCYTHEMIA, primary, radiophosphorus for, [Erf] 62—ab
POLYURIA See Diabetes Insipidus
POPULATION· See also Vital Statistics
  Policy Commission, Japan's eugenics program, 185—OS
PORENCEPHALY, [Pendergrass] 130—ab
PORK See also Trichinosis
  best animal feeds, effect on milk supply, 775—E
PORPHYRIA, acute, [Jorgensen] 1316—ab
  acute, fatal case, [Abbott] 723—ab
  chronic, complicating pregnancy, [Linas & others] ★105
  neuropsychiatric aspects, [Schneck] 202—ab
PORTAL VEIN, obstruction in diabetic child, 279
  pyelothrombophlebitis, streptomycin for, [Wishart & Peterson] ★539
PORTRAITS See under names of individuals as Guerry, McClaran
POSITION in Space See Posture
POSITIONS Open· See Physicians; U. S Government
POST products, attacks centered on J A M. A. editor Dr Simmons, in 1910 [Fishbein] ★762
POSTAGE STAMP· See also Mail
  honors A M A centennial, 1219—OS
POSTGRADUATE *Medicine* See Journals
  Schools See Schools, Medical
  Work See Education, Medical, graduate
POSTMORTEM See Autopsies; Death
POSTOPERATIVE See Surgery
POSTPARTUM See Puerperium
POSTURE, Early Rising after Operation, etc: See Convalescence
  peroneal palsy from crossing legs, [Nagler & Rangell] ★755
  position of relief in intestinal strangulation, [Evans & Bigger] ★514
POSTWAR Medical Service, Committee on: See American Medical Association Joint Committee for Coordination of Medical Activities
POTASSIUM bitartrate, dusting powders for rubber gloves, 1218—E
  intoxication, [Finch] 61—ab
  salts treatment of myasthenia gravis, 1252
POWDER See Dusting Powder
POWER See Energy
  Atomic· See Atomic Energy
POWERS, PHILIP N., on Presidential Scientific Board, 185—OS
POX Disease (new): See Rickettsialpox
PRACTITIONERS: See Physicians practicing
  Drugless See Cults
PREFRONTAL Leukotomy. See Brain surgery
PREGNANCY: See also Fetus; Impregnation; Labor, Maternity; Obstetrics; Placenta; Puerperium, Reproduction, Medicolegal Abstracts at end of letter M
  blood (maternal-fetal), oxygen pressure gradient [Barron] 207—ab
  blood picture in 9th month, 1254
  complications· adenoma of islands of Langerhans, [Pompen] 1317—ab
  complications amebiasis, 1042
  complications· brucellosis, 357
  complications diabetes, fetal hyperplasia of Langerhans islets, [Hultquist] 1318—ab
  complications. endometriosis, 436
  complications: epilepsy, [Burnett] 1037—ab
  complications: heartburn, [Roth] 427—ab
  complications: hyperthyroidism, thiouracil for, 73
  complications: porphyria (chronic), [Linas & others] ★105
  complications: regional enteritis, [Williams] 966—ab
  complications rubella and chickenpox; defects in child, [Swan] 1316—ab
PREGNANCY—Continued
  complications: rubella; congenital deafness in child [Hopkins] 268—ab; [Clayton-Jones] 1316—ab
  complications: rubella; deaf-mutism in child, 1012
  complications: thyrotoxicosis, 655
  complications: toxoplasmosis probably not recur in subsequent pregnancies, 970
  complications: uterine contractions painful, 214
  diagnosis, breast striae, 358
  diagnosis, melanophore reaction, [de Bourgraaf] 730—ab
  diagnosis, metreurynter in uterine bleeding; positive Aschheim-Zondek test, 74
  diet deficiency in, [Vilter] 206—ab
  diet, nutrition during, [Keitel] 345—C
  ectopic, fetal bones in bladder, [Forshaw] 429—ab
  ectopic in cervical mucosa, [Schneider] 131—ab
  ectopic (tubal), conservative surgery in, [Graham F] 730—ab
  electric shock during, cause fetal death? 280
  Interruption of· See Abortion
  interval (prolonged) between, 578
  intrauterine respiration of fetus, [Windle & Becker] 125—C
  Multiple See Twins
  pollen desensitization in, 1174
  Protection from· See Contraception
  Rh factor, 577
  roentgen therapy during, cause congenital malformations, [Keitel] 716—C
  sulfonamides used in, effect on fetus, 970
  Toxemia of. See Eclampsia
  weight gain in, vs. weight of newborn [Klein] 129—ab
PREMEDICAL Work: See Education, Medical
PREPAREDNESS, Medical See World War II
PREPAYMENT Plans· See Hospitals, expense insurance; Medical Service Plans; Medicolegal Abstracts at end of letter M
PREPUCE· See Circumcision
PRESCRIPTION: See also Glasses, Medicolegal Abstracts at end of letter M
  liquor, 1923, [Fishbein] ★931
  warnings on labels of prescribed drugs, (Council discusses), 850
PRESERVATIVE: See Serum plasma; Spermatozoa; Tissues
PRESIDENT'S Atomic Energy Commission, 327—OS
  Reorganization Act, need for clarifying lobbying provisions of, 112—OS
PRESS: See Newspapers
PREVENTIVE MEDICINE· See also Immunization; Vaccination
  department aid, Ohio, 336
PRIAPISM in leukemia, dicumarol contraindicated, 73
PRIORITIES AND ALLOCATIONS: See also Automobiles
  streptomycin, allocation to France, 1234
  streptomycin allocation to Veterans Administration increased, 787—OS
PRISONERS of War. See World War II, prisoners
PRIVILIGED COMMUNICATIONS: See Medicolegal Abstracts at end of letter M
PRIZES See also Fellowships; Lectures; Scholarships
  Albert Medal, 878
  Alvarenga, 882
  American Association for Advancement of Science, 416
  American Institute of Nutrition Award, 51
  American Pharmaceutical Manufacturers Association award to Mayo Foundation, 337
  American Women's Association Medal, 256
  Awards for Distinguished War Service See World War II, Heroes
  Borden Awards, 794
  Bronze Star See World War II, Heroes
  Capps (Joseph A), 637; 1292
  Crane, to discover cause and cure of poliomyelitis, [Fishbein] ★841
  Doyne (R W) Memorial Medal, 706
  Fulton County Medical Society, to encourage writing, 1227
  Gibbs (Edward N) Memorial, 415
  Gibbs (Willard), 878
  Hoover Medal, 185—OS
  Jefferson Medical College awards to students, 563
  Jeffries Award, 408
  Kappa Sigma Fraternity, 51
  Kober (George Martin), 1015—OS
  Lasker Award of Planned Parenthood Federation, 337
  Mississippi Valley Medical Society, essay contest, 191
  National Safety Council traffic safety awards, 1294
  National Society for Prevention of Blindness, (for paper on glaucoma) 258
  Nobel, (age of winners), 296—ab (winners for 1946) 191; (Dr. Chain in Italy) 1030
  Norton Medical Award, 492
  Order of the Vasa (Swedish), 1230
  Phi Lambda Kappa, 708
  Reed (Walter) Medal, 117
  Schering Award, 956

PRIZES—Continued
  Sugar Research Foundation, 52
  Tulsa Civil Service awards, 1164
  West Virginia Cancer Society Inc, essay contest, 415
PROCAINE HYDROCHLORIDE, intravenous, for asthma, [Durieu] 729—ab
  intravenous for penicillin "serum sickness" reaction, [Rosellini] 204—ab, [Dressler & Dwork] ★849, (warn of danger) [Abram; Waldbott] 1301—C
  sympathetic block in local shock, [Thomson] 66—ab
PROCTALGIA: See Rectum
PROCTOLOGY, interpretation of ulcerative colitis, [Kleckner] ★998
PROCTOR Lecture. See Lectures
PROFESSION: See Medicine, profession of
PROFESSORS: See also Teachers
  age limits, Italy, 880
  retirement age (65), Buenos Aires, 196
PROGESTERONE, control of menorrhagia, [Greenblatt] 723—ab
PROMIN treatment of leprosy, 46—OS; [Wharton] 967—ab
  treatment of scleroderma, [Wuerthele] 1312—ab
PROMIZOLE, treatment of leprosy, 46—OS
tising, in J. A. M A, ★390; ★391; (in 1900) ★681, ★686; (in 1910) ★764
  Proprietary Association of America, enemy of A M A, [Fishbein] ★686
PROPYL ALCOHOL: See Isopropyl Alcohol
PROPYLENE GLYCOL, for disinfecting purposes 696—E
PROPYLTHIOURACIL, treatment in hyperthyroidism, [Astwood] 500—ab, 544—E
  treatment in thyrotoxicosis, [Reveno] ★1190
PROSTATE, cancer and vesical cancer, 279
  cancer, estrogens for [Fergusson] 69—ab; [Weijtlandt] 503—ab
  cancer, ethinyl estradiol for [McCrea] 965—ab
  cancer, prostatic phosphatase in serum, [Herbert] 69—ab
  cancer, skeletal metastases with myelofibrosis, [Bersack] 131—ab
  hypertrophy or cancer, vasectomy to prevent, 358
  Inflammation: See Prostatitis
  Surgery See Prostatectomy
PROSTATECTOMY in tenth decade, [Frater] 69—ab, [Scholtz] 503—ab
  suprapubic, thrombin and fibrin foam in, [Quinby] 203—ab
PROSTATITIS treatment, streptomycin, 855—E
  trichomonas, 733
PROSTHESIS: See also Limbs, Artificial
  experiments and training in making, 253
PROSTIGMINE: See Neostigmine
PROSTITUTION, Army and Navy merge their drive against vice, 112—OS
PROTEIN See also Meat
  Bence-Jones, in multiple myeloma, [Bayrd & Heck] ★150
  biochemistry of, recent developments, Netherlands, 56
  Deproteinated Pancreatic Tissue: See Pancreas
  diet high in, effect on bends, chokes, etc, [Burkhardt & others] ★374, ★376
  diet low in, for multiple myeloma, [Snapper] ★157
  Hydrolysates: See also Amigen
  hydrolysates and dextri-maltose in peptic ulcer, [CoTui] 1312—ab
  hydrolysates in myasthenia gravis, 1252
  hydrolysates in peptic ulcer [Ruggiero] 272—ab
  in Blood See Blood
  in Spinal Fluid: See Cerebrospinal Fluid
  in Urine See Albuminuria
  nitrogen balance, 247—E
  Sensitivity to See Anaphylaxis and Allergy
PROTEOSE, urinary, treatment of allergy, [Rhoads] 135—ab
PROTEUS and paracolon cultures, urea medium to differentiate, [Christensen] 136—ab
  OX strains, specificity of Weil-Felix reaction, 358
  vulgaris urinary tract infection, streptomycin for, [Adcock & Plumb] ★579
PROTHROMBIN See Blood prothrombin
PRURITUS ani, neurogenic, [Granet] 126—ab
  generalized, 812
  relief by biliary drainage, [Varco] 1314—ab
PSEUDOGLYCOSURIA in patients given penicillin, [Boldyreff] 715—C
PSEUDOHEMOPHILIA, [Perkins] 349—ab
  possible case of? 1320
PSEUDOMONAS aeruginosa urinary tract infection, streptomycin for, [Adcock & Plumb] ★579
PSITTACOSIS, [Meyer & Eddie] ★822; (diagnosis in children) ★824
PSYCHIATRY See also Hospitals, psychiatric; Mental Disorders, Mental Hygiene; Neuropsychiatry, Psycho—
  alcohol problem and, 561
  American Board of. See American
  casualties (war), high incidence [Hanley] 344—C
PSYCHIATRY—Continued
  clinics for children, 878
  diagnosis, methedrine in, [Simon] 724—ab
  graduate training, Pa, 1024
  pavilion opened, N.Y C, 637
  Personnel Placement Service, 117
  Psychiatric Foundation, function, 878
  research, positions open, 337
  sense and nonsense, [Burlingame] ★971
  social workers institute, 413
PSYCHIATRISTS confer at War Department, 408
  National Advisory Mental Health Council advocates training 600, 405—OS
  positions open, 877
PSYCHOANALYSIS, Chicago Institute for, research, 1023
PSYCHOANALYSTS, congress of, Italy, 881
PSYCHOLOGY, factors in obesity, [Freed] ★369; [Johnson] 1238—C
  of tuberculous, [Day] 428—ab
PSYCHONEUROSIS See also Neurosis
  treatment, electrical convulsions, [Milligan] 68—ab
PSYCHOPATHIC Hospitals: See Hospitals, psychiatric; Hospitals, state
PSYCHOSES. See Mental Disorders
PSYCHOSOMATIC disorders, ocular symptoms, [Harrington] ★669
  medicine, in neurology, [Wilson & Rupp] ★509
PSYCHOSURGERY See Brain surgery
PUBLIC Health. See Health
  Health Nurses, Nursing: See Nurses, Nursing
  relations and medical profession, [Swart] 534—ab
  relations, how can local societies promote? [various authors] 628—ab
  Schools See Schools
  Speaking: See Speakers
PUPILS: See Children, school
PUERPERIUM, blood picture in, 1254
  complications acute mastitis, penicillin for, [Taylor] 428—ab
  early rising, [King] 129—ab
  hemorrhage, (postpartum) [Odell & others] ★735
  infectious mononucleosis in, [Trincao] 142—ab
  pituitary necrosis postpartum and diabetes insipidus, [Spain] 727—ab
PUERTO RICO, medical activities, A M A resolutions on inclusion in JOURNAL, 40
PULLMAN Cars See Railroads
PULMONARY: See Lungs
  Embolism. See Embolism
  Tuberculosis See Tuberculosis of Lung
PULMONARY VALVE, gonococcic endocarditis of, penicillin for, [Myers] ★1205
  stenosis (congenital), surgery for, [Blalock] 426—ab
PULSE rate, effect of high altitude flight, [Behnke] ★450
PURPURA, hereditary hemorrhagic thrombasthenia, [Perkins] 349—ab
  thrombopenic, after rubella, [Magnusson] 968—ab
  thrombopenic, BAL for, [Lockie & others] ★754
PUS: See Abscess, Skin infection; Suppuration; Ulcers
PUSEY, WILLIAM ALLEN and A M A Council disagreement, 1924, [Fishbein] ★934
PYELOGRAPHY in hypertension; splanchnicectomy, [Nesbit] 1311—ab
PYELONEPHRITIS, treatment, streptomycin, [Adcock & Plumb] ★579
PYLETHROMBOPHLEBITIS, treatment, streptomycin, [Wishart & Peterson] ★539
PYOGEN, spray promoted to industry as "cold" cure (Joint Council report), 694
PYREXIA See Fever
PYRIBENZAMINE, antihistamine drugs and hypertension, 812
  histamine antagonist, [Friedlaender] 1309—ab
  treatment of penicillin urticaria, [Pillsbury & others] ★1255
PYRIDOXINE treatment of myasthenia gravis, 1252
PYROSIS. See Heartburn

Q

Q FEVER in U S, [Topping & others] ★813; [Irons & Hooper] ★815, [Irons & others] ★819, [Cox & others] ★820
QUARTERLY Cumulative Index Medicus. See American Medical Association
QUESTIONNAIRES, A M.A Committee on National Emergency Service to civilian physicians, 480—E, [Dickinson] 548—ab, 550—ab
  A M A Committee on Rural Medical Service, 941—OS
QUINACRINE HYDROCHLORIDE (atabrine)
  blood plasma concentrations, [Becker] 202—ab
  "blue halos" of cornea in atabrine workers, [Mann] 1315—ab
  fluorescence of nails, 1252
  suppression of malaria, individual failures, [Bang] 132—ab
  toxicity dermatitis and aplastic anemia, [Drake] 134—ab
QUINACRINE HYDROCHLORIDE—Continued
  toxicity. dermatosis, [Peterkin] 727—ab
  treatment of Giardia lamblia infection, 74
QUINIDINE, dosage schedule, 1044
  sulfate and lanatoside C for auricular flutter, [Tandowsky] 424—ab
  sulfate, treatment of acute coronary occlusion, 357
QUININE and plasmochin combined for vivax malaria, [Most] 570—ab
  anticipating need for, by A. M A in 1870 [Fishbein] ★101
  poisoning, value of gastric lavage in, 545—E; (technic) [Kantor] 1238—C
  Quinine-Dextro, 568—BI
QUINSY Sore Throat: See Abscess, peritonsillar

R

RABBIT Fever See Tularemia
RABIES, [Meyer & Eddie] ★822
  vaccination required for all dogs, N Y. C., 116
  vaccine, complication, [Zabludovich] 430—ab
  vaccine, myelitis after, [Bussell] 728—ab
  warning, Chicago, 561
RACES See also Indians, Negroes
  specific disease sickle cell anemia, 33—E
RADIANT energy lamps, Eastman, 1008
RADIATION. See also Atomic Energy, Infra-Red Rays, Radiotherapy, Radium, Roentgen Rays, Ultraviolet Rays
  Therapy. See also Radiotherapy, under names of specific organs and diseases
  therapy in breast cancer, [Kaplan] 1245—ab
  therapy, mechanism of effects, [Warren] ★462
RADICULITIS See Sciatica
RADIO See also Television
  dramatization by CBS "A Long Life and a *Merry One*" reviewed, 1161—OS
  dramatizations, costs to state societies, [various authors] 630—ab
  electrical transcriptions "Medicine serves America," 324—E; 326
  Frequency Energy Apparatus See Diathermy
  Program by A M A. See American Medical Association
  state society participation in network broadcasts, [Bauer] 548—ab
RADIOACTIVE drugs, tests at National Cancer Institute, 631—OS
  Elements: See Atomic Energy
  Iodine: See Iodine
  Phosphorus. See Phosphorus
RADIOLOGY, American College of, graduate course in, 337
  Indian Journal of Radiology, new journal, 416
RADIOPHOSPHORUS: See Phosphorus
RADIOTHERAPY. High Dosage Treatment (motion picture review), 802
RADIUM, Belgium gift to Switzerland, 118
  Emanation: See Radon
  poisoning determine radium in body to prevent, [Hess] 1305—ab
  treatment, local recurrence of cancer 18 years *after, [Covington]* ★935
RADON nasopharyngeal applicator for asthma in children, *[Ward & others]* ★1060
  needles (interstitial), comparative value, [Taylor] 130—ab
RAGWEED dermatitis, [Slater] 803—ab
  control, N Y. C, 1228
RAILROADS, Pullman car sanitation, Dr Hurty urges A M A. action in 1901, [Fishbein] ★607
RAINIER Natural Soap, 568—BI
RAMALINA reticulata, Spanish moss as antibiotic, [Marshak] 1245—ab
RAMSES Vaginal Jelly, also Applicator, N N R, (Schmid) 1281
RASH See Eruptions
RATION, Rationing See Food, Priorities and Allocation
RATS: See also Rodents
  control program, Cleveland, 1024
  reproduction of, given caffeine, [Bachmann] 202—ab
RAYNAUD'S DISEASE, ocular symptoms, [Harrington] ★672
RAYS See Radiation
RAZ-MAH, Templeton's, Capsules, 568—BI
REBATES *and fee splitting*, [Patek] 715—C; (A M. A action in 1924) [Fishbein] ★933
RECEPTOR gradient (virus) in erythrocytes, [Burnet] 67—ab
RECORD Librarians See Medical Record Librarians
RECREATION: See also Physicians, avocations
  Recreational and Occupational Therapy, (motion picture review), 802
RECRUITS: See also World War II
  physical examinations of, in final months of war, 854—E
RECTOSIGMOID, cancer [Howard] 427—ab
RECTUM See also Anus, Proctology
  cancer, [Howard] 427—ab
  cancer, conservative operation, 55
  cancer, contact roentgen therapy, [Gros] 651—ab

REHABILITATION, after chest surgery, 10
  [illegible] center opened, Washington, D. C, 408
  hearing and speech, program, Ill., 561
  hospital for spastic children, 256
  Institute of, campaign to raise $2,000,000, 50
  National Council on, 708
  of patients with injury to spinal cord (motion picture review), 1033
  vocational, in Illinois, [Pearson] 501—ab
  Vocational Rehabilitation Act, additional training under, 113
REITER'S SYNDROME and pleuropneumonia-like organisms, [Wallerstein] 137—ab
RELAPSING FEVER, louse borne, penicillin for [Ingraham] 207—ab
RELEASE of Medical Officers: See World War II, *medical officers*
RENAL: See Kidneys
  Glycosuria: See Glycosuria
  Rickets: See Osteodystrophy, renal
RENDU-Osler-Weber Disease: See Telangiectasia
RENIN in cardiac failure, [Merrill] 421—ab
  in essential hypertension, [Taquini] 61—ab
REPRODUCTION. See also Contraception, Fertility; Pregnancy; Sterility
  of rats given caffeine, [Bachmann] 202—ab
RESEARCH: See also Animal Experimentation, Science; under specific headings as Cancer
  approach to, 366—ab
  center (medical) U S P H S seeks, 45—OS
  clinical, cost, Therapeutic Trials Committee report, ★30
  clinical, Western Society for, organized, 336
  continued need for, 184—OS
  defense, *in 1900, [Fishbein]* ★533
  Fellowships: See Fellowships
  Grant for: See also Foundations
  grant in endocrinology by National Research Council, 118
  grants for, by National Advisory Health Council, 1289
  Institute for Tropical Medicine, Liberia, 192
  medical, A M A Council on Defense of, [Fishbein] ★691 ★763
  medical, Childs Memorial Fund for, 1231
  medical, Committee on, of OSRD, accumulated records, 1295
  medical, German, unpublished, 416
  medical, long range program by National Research Council, 1289
  medical, nationwide, organization for, 187
  medical, Oklahoma Foundation, 414
  medical progress and, 400—E
  Medical Research Council See *Medical Research Council*
  National Research Council See National Research Council
  needs in nutrition, [Jeans] ★245
  nuclear, for medical and public health work, 327—OS
  prisoners act as guinea pigs in German camps, Dr. Ivy's report, 35, [Wertham] 645—C
  Prizes for: See Prizes
  program *of* U S. *government*, 462—ab
  Scandinavian cooperation in, 421
  science and U. S government, stable relations reported by Dr Bush, 250—OS
RESPIRATOR, A M A Council refuses to recognize term "iron lung" 936
RESPIRATORY METABOLISM See Metabolism basal
RESPIRATORY SYSTEM See also Bronchus; Lungs Pleura Trachea
  Disease See also Bronchiectasis, Lungs; Pneumonoconiosis
  disease, streptococcus and nonstreptococcic, [Rantz] 132—ab
  disease (acute) Commission on, tonsillitis and pharyngitis of unkonwn cause, ★588
  Infection See Colds Influenza, Pneumonia Tuberculosis of Lungs
  tumor cells spread via, [Furth] 268—ab
REST See Sleep
  Bed early rising after operation, etc: See Convalescence
RESTAURANTS drive to clean up, Chicago, 275 875
  health department closes five N Y, 1229
RETAIL trading areas, principles applied to study of medical service, 1011—E; [Dickinson] ★1014
RETINA: See also Retinitis
  central angiospastic retinopathy; psychosomatic disorders [Harrington] ★672
  stimuli motor component 713
RETINITIS pigmentosa, tissue therapy, [Lipkina] 632—ab
RETINOBLASTOMA, heredity; evidence in 2 families [Falls] ★171
RETIREMENT See Army, U S, Professors
RETROBULBAR Neuritis See Nerves, optic
REVISTA See Journals
REYBURN, ROBERT, case history of President Garfield [Fishbein] ★389, ★390
RH Factor, 577
  blood laboratory set up, Washington, D C., 181—OS
  blood typing, Conn, 636
  federal biologics regulations revised and expanded 855—E
  in newborn and erythroblastosis, [Hill] 201—ab
  interaction of spinal fluid and, [Jakobowicz] 805—ab
  isoimmunization, [Philpott] 1035—ab
RHEUMATIC FEVER, acute, salicylates effect on, [Warren] 61—ab
  Cardiac Complications: See Heart disease (rheumatic)
  diagnosis, criteria, [Griffith] ★974; (in young adults) [Sokolow & Snell] ★981
  diagnostic centers, Mich, 335
  frequency, [Harving] 806—ab
  Herrick House for convalescent children, Ill, 636
  Institute for Study of, at Northwestern U., 791
  treatment: salicylates, oxygen, diuretics, sulfonamides, penicillin, vitamins, iron, fever, roentgen therapy, blood plasma, serums and vaccines, climatotherapy and physiotherapy, [Griffith] ★974
RHEUMATISM See also Arthritis
  Acute Articular See Rheumatic Fever
  chronic, copper salts in, [Forestier] 1317—ab
ROCKET, insects survive flight into ionosphere by, 874—OS
ROCKY MOUNTAIN SPOTTED FEVER, diagnosis (differential) from rickettsialpox, [Greenberg & others] ★904
  grant to study tick fever, 1291
  treatment, *p*-aminobenzoic acid, [Ravenel] ★989
RODENTS: See also Mice, Rats
  poliomyelitis transmitted to, 1217—E
  war on, continuation, 871—OS
RODMAN, W L, National Board of Medical Examiners, 1915, [Fishbein] ★837; ★839
ROENTGEN RAYS apparatus (portable), sale of, 559
  bone age studies and hypothyroidism, [Dutton] 965—ab
  burns, sulfhydryl treatment, [Cruthirds] 131—ab
  Diagnosis See also Roentgenography (cross reference)
  diagnosis in tuberculosis, compare photofluorographic and other methods, [Birkelo & others] ★359, 399—E, [Kovnat] 963—C
  diagnosis, stereoroentgenograms in esophageal leiomyoma, [Schafer & Kittle] ★1202
  Irradiation See Roentgen Therapy
  pharmacoradiographic agent: insulin, 420
  technicians, schools for, approved by A M.A., ★1144
  technicians, statistics on in hospitals, ★1077
ROENTGEN THERAPY: See also Bursitis; Hemophilia, Spine arthritis
  contact, in rectal cancer, [Gros] 651—ab
  deep, centers for, by Army Medical Department, 329
  in pregnancy cause congenital malformations, [Keitel] 716—C
  intravaginal cones for [Taylor] 130—ab
  ionization measurements with bone chambers, [Stenstrom] 887—ab
  near distance, Chaoul's modified method, [Arho] 142—ab
ROENTGENOGRAPHY. See Arteries, roentgen study; Gallbladder, roentgen study; Lungs, roentgen study; Peptic Ulcer diagnosis; Pyelography, Roentgen Rays diagnosis
RONGETTI, AMANTE, sentenced *for practicing* without license, 1023
ROSENBERGER, J. L, abstracts of medicolegal decisions, 1893, [Fishbein] ★389
ROSENSTOCK Foundation See Foundations
ROTHSCHILD Lecture: See Lectures
ROULEAUX Formation: See Erythrocytes
ROUNDWORMS: See Ascaris; Ascariasis
ROVIN, ALEXANDER M, interest in pyogen, (Joint Council report) 694
ROVSING'S Sign, rebound tenderness in ab*dominal disease*, 508
ROYAL. See also British; England
  College of Nursing, 1029
  College of Surgeons, (overseas examinations for fellowship) 121; (report) 261; (conflict on National Health Service Act) 419; 643
  Colleges (controversy on National Health Service, England) 419; 643
RUBBER balloon, dermatitis due to, 1174
  gloves, dusting powders for, 1218—E
  gloves, talc granuloma, [Lichtman] 206—ab

- RUBBER—Continued
  - manufacture, prevent dermatitis in, 1254
  - tires filled with water, mosquitoes transported in, 559; [Pratt] 725—ab
- RUBELLA, maternal, cause of deaf-mutism in child, 1012—E
  - maternal [illegible] child, [Hopkins] [illegible] 1316—ab
  - maternal, [illegible] 1316—ab
  - thrombocytopenic purpura after, [Magnusson] 968—ab
- RUBEOLA: See Measles
- RUBINOW, I. M., A. M. A. committee report on social insurance [Fishbein] ★836 ff., ★923
- RUFUS, HOWARD C., personal, 409
- RUPTURE: See Hernia; under name of organ as Kidneys; Spine, intervertebral disk; Spleen
- RURAL COMMUNITIES: See also Farmers
  - health centers and hospital facilities for, [Weagley] 781—ab; [Davis] 860—ab; (Committee report) 860—ab
  - health, Committee on Health Council as Agency for Promoting, [Jones] 864—ab
  - health, National Conference on, (program) 326—OS; (proceedings) 778—OS; 860—OS
  - health problems, Turkey, 1236
  - health, survey, Conn., 636
  - medical facilities available, Virginia, 251—OS
  - medical prepayment plans as they apply to, [Mertz] 782—ab
  - medical prepayment plans, experience with Blue Cross, [Helsby] 407
  - medical service, A. M. A. Committee on, (report) 37; (questionnaire) 941—OS; 945—OS
  - medical service program and the farmer, [Goss] 778—ab
  - medical service (Joint Committee report), 44
  - medical service, (Reference Committee report), 37
  - nursing needs, committee report, [Sewell] 863—ab
  - physicians for, methods of bringing and holding, [Humphrey] 778—ab; [Starr] 779—ab; [Mulholland] 861—ab
  - physicians for, scholarships to provide, (Indiana) 489; (Illinois) 706
- RUSH, BENJAMIN, monument, [Fishbein] ★311; ★315; ★316; ★468; ★469; ★613; ★682
- RUSSIA, cancer treatments from, 111—E; 122; [Gross] 800—C; [Kiyuvea] 1038—ab
  - foreign letter from, 122; 713; 1235
  - training 1,980,000 technicians in 5 years, 788—OS
  - visiting scientist returns to Moscow: V. V. Parin, 638
  - visitors (physicians) to India, 1235
  - visitors to Stockholm, 421
- RUTIN, incompatible with sulfonamides, [Kushlan] 716—C
  - treatment of hereditary hemorrhagic telangiectasia, 247—E

S

- S-140: See Demerol
- S. 140: S[illegible]
- S. 1606: [illegible] Bill
- SACRAL [illegible] Anesthesia, caudal
- SADDLE Block: See Anesthesia
- SAFETY: See also National Safety Council
  - code (new) for anesthesia apparatus, England, 797
- .ST. JOHN'S bread (powdered) treatment of diarrhea, [Rohmer] 729—ab
- SALARIES: See Income; Wages
- SALESMEN, Fraudulent: See Impostors
- SALICYLATES: See also Acid, acetylsalicylic
  - effect on acute rheumatic fever, [Warren] 61—ab
- SALIVA, sialorrhea and morphine addiction, 899
- SALT: See also Sodium chloride
  - deficiency in sprue, [Black] 352—ab
  - diet low, in congestive heart failure, [Wheeler & others] ★16; (early work of Hermann Strauss in 1902), [Gossels] 497—C
  - iodized, and goiter; amend Food, Drug and Cosmetic Act; A. M. A. Council decision, 620—E
  - iodized, federal law proposed, 1161
  - mobilization of salts from skeleton; lability of bone, 110—E
  - water metabolism, disturbance in hypertension, [Perera] 499—ab
- SAN JOAQUIN Valley Fever: See Coccidioidomycosis
- SANITATION: See also Health; Hygiene
  - Industrial: See Industrial Hygiene
  - lacking in restaurants, (Chicago) 255; 875; (New York) 1229
- SANO, 568—BI
- SARCOIDOSIS, electrocardiographic and spirometric study, [Leitner] 730—ab
  - simulating glomerulonephritis, [Klinefelter] 722—ab
  - symptom of tuberculosis, [Cameron] 207—ab
  - uterine changes in, [Engelhard] 70—ab
- SARCOMA: See under organ or region affected as Bones; Breast; Uvea
- SARDINES, embargoed, food poisoning from, 50; 877
- SAVINGS: See Investments
- SCALDS: See Burns
- SCALENOTOMY: See Muscles
- SCALENUS Anticus Syndrome: See Muscles
- SCALP: See also Alopecia; Hair; Head
  - Dr. Marshall's Medications, 568—BI
  - Ringworm of: See Tinea Capitis
- SCANDINAVIAN cooperation in research, 421
- SCAPULA: See Shoulder
- SCAR: See Cicatrix
- SCARLET FEVER, treatment, penicillin, [Jennings] 1303—ab
  - treatment, penicillin effect on evolution of, 960
  - treatment, penicillin to prevent acute otitis media, [Weiss] 206—ab
  - treatment, penicillin, vs. antitoxin and symptomatic therapy, [Hirsh & others] ★657
  - treatment, penicillin, vs. convalescent serum and sulfonamides, [Hoyne & Brown] ★661
  - when to discharge patients, Denmark, 961
- SCHAFFNER'S "Little Doc" Jr. First Aid Kit, 883—BI
- SCHAUMANN-Besnier-Boeck Disease: See Sarcoidosis
- SCHERING Award: See Prizes
  - Corporation, government profits from, 556—OS
- SCHISTOSOMIASIS, Asiatic, [Warren] 1311—ab
  - Asiatic, latent phase, [Mason] 888—ab
  - diagnosis, cercarial antigens for intradermal test, [Alves] 69—ab
  - japonica in Leyte reoccupation, fuadin for, [Winkenwerder] 1242—ab
- SCHIZOPHRENIA: See Dementia Precox
- SCHIZOTRYPANUM cruzi: See Trypanosoma cruzi
- SCHOLARSHIPS: See also Fellowships
  - established, Ky., 189
  - for study of eye diseases, N. Y., 50; 637
  - National Society for Prevention of Blindness, 794
  - regional, at Washington, 413
  - to provide rural physicians, (Ind.) 489; (Ill.) 706
- SCHOOLS: See also Education; Students; University
  - Children: See Children, school
  - for food handlers, Ga., 489
  - for Medical Record Librarians: See Medical Record Librarians
  - for Technicians: See Occupational Therapy; Physical Therapy; Roentgen Rays; Technologists
  - health and physical fitness project of A. M. A., 945—OS
  - health challenge of our schools, 696—E
  - health education, W. Va., 491
  - health program, body measurements, [Stuart] 719—ab
  - health program, Fla., 561
  - hygiene, congress of, France, 52; 118
  - National School Health Services Act, 632—OS
  - of Nursing: See Nursing
  - Summer School of Alcohol Studies at Yale, 636
  - Teachers: See Teachers
- SCHOOLS, MEDICAL: See also Education, Medical; Students, Medical; University; under names of specific schools
  - Association of American Medical Colleges, (survey by) 109—E; 945—OS; (plan for uniform intern placement) 267
  - Curriculum: See Education, Medical
  - deans' committees, residencies in veterans hospitals, 855—E; (round table discussion), 856—ab
  - deanships, unprecedented turnover in, 492
  - financing, 1158—E
  - graduate, of College of Medical Evangelists, 115
  - in Spain, 343
  - new, founding, [Weiskotten] ★1045
  - new undergraduate, proposed, Palestine, 416
  - rating by A. M. A., 1910, [Fishbein] ★763
  - responsibilities to a community, [Greene] ★1053
  - statewide committee on behalf of, [various authors] 629—ab
  - survey, 109—E; 945—OS
  - U. S. Army Medical Department Research and Graduate School, 789
  - U. S. Navy School of Aviation Medicine and Research, 488
  - U. S. Navy School of Tropical Medicine, new, Guam, 331
- SCIATICA, acute rheumatic, stretching sciatic nerve in, [Cammaert] 968—ab
  - herniated disk and, [Thiebaut] 430—ab
- *SCIENCE*: See Journals
- SCIENCE: See also Research
  - Basic: See Basic Science
  - board (presidental), Powers named to presidental scientific board, 185—OS
  - Medical: See Medicine
  - National Science Foundation, 180—E; 184—E; 328—OS; 1161
  - UNESCO, Paris conference, 342
- SCIENTIFIC Exhibit: See American Medical Association
  - Tests: See Medicolegal Abstracts at end of letter M
- SCIENTISTS, Truman thanks, for wartime research, 327—OS
- SCLERODERMA, treatment, 578
  - treatment, promin, [Wuerthele] 1312—ab
- SCLEROMA: See Rhinoscleroma
- SCLEROSIS: See also Arteriosclerosis; Blood Vessels: Liver cirrhosis; Otosclerosis
  - multiple, Association for Advancement of Research in, 878
  - multiple, dicumarol for, [Putnam] 1306—ab
  - multiple, what do we know of? [Reese] 201—ab
- SCOTOMA, angioscotoma in prolonged mild anoxia, [Smith] 1308—ab
- SCROTUM Hernia: See Hernia
- SCRUB Typhus: See Tsutsugamushi Disease
- SCURVY, anemia in, [Wade] 64—ab
  - vertigo and, [Ohnell] 430—ab
  - treatment, vitamin C, [Schnurman] 1036—ab
- SEA Vegecene, 883—BI
  - Vegetable Tablets, West's Imported, 883—BI
  - Vegetables Vitaminized with Added Vitamin A, 883—BI
- SEASICKNESS: See Motion Sickness
- SEALS, A. M. A., use of, 112—OS; 321
- SEAMAN Fund: See Foundations
- SEA-Sol, 883—BI
- SEA-V-Aid, 883—BI
- SEA-Vo-Kra, 883—BI
- SEBACEOUS Cyst: See Steatoma
- SEBORRHEA and pilocarpine, 577
- SECONAL sodium, convulsive seizures after barbiturate withdrawal, [Osgood] ★104
- SECRETARIES: See Societies, Medical
- SECURITIES: See Investments
- SECURITY: See Social Security
  - U. S. Department of: See Taft-Fulbright Bill
- SEDATIVES and postoperative vomiting, 810
- SEDIMENTATION Rate: See Blood
- SEEING-eye Dogs: See Dogs
- SEIZURES: See Convulsions; Epilepsy
- SELECTIVE SERVICE: See World War II; Medicolegal Abstracts at end of letter M
- SELF-MEDICATION: See also Nostrums
  - of benadryl, danger, [Borman] ★394
- SEMEN: See Spermatozoa
  - Artificial Insemination: See Impregnation, artificial
- SEMICARBAZONE, 5-nitro-2-furaldehyde, use [illegible] others] ★299
- SENSATION: See Paresthesia
- SENSES: See Hearing; Taste; Vision; etc.
- SENSITIVITY: Sensitization: See Anaphylaxis and Allergy
- SEPTICEMIA: See Meningococcemia
- SERODIAGNOSIS: See Syphilis; Trichinosis; Typhus
- SERUM: See also Biologic Products; Vaccine
  - Antireticular Cytotoxic: See Bogomolets
  - Blood: See also Serum, plasma; etc. and subheads under Blood
  - blood, where obtain antiserum for measuring antibodies in? 810
  - Convalescent: See Scarlet Fever
  - plasma (human), (Council discusses), 850
  - plasma (human), storage in liquid state, [Lozner] 349—ab
  - plasma (surplus), distribution by American Red Cross, 482—OS
  - plasma, toxicity of phenyl-mercuric borate used to preserve? 214
  - Plasma,, Transfusion of: See Blood Transfusion
  - plasma, treatment of epidemic keratoconjunctivitis and keratitis, 508
  - Reaction: See Anaphylaxis and Allergy
  - regulations, revision and expansion of, 855—E
  - Sickness: See Anaphylaxis and Allergy
- SERVICE, Physicians Separated from the Service: See World War II, Medical Officers
- SERVICEMEN: See Veterans; World War II
  - Readjustment Act: See G. I. Bill of Rights
- SEWAGE *system, new* (2), Ill., 954
  - pollution of rivers, bill to control, 1219—OS
- SEX: See also Fertility: Reproduction; Sterility
  - Desire: See Libido
  - Function, Decline of: See Menopause
  - function in men, prolonged use of barbiturates affect? 279
  - Hormones: See Androgens; Estrogenic Substances; Gonadotropins
  - importance of donors and recipients in transfusion, [Hustin] 1038—ab
  - Impotence: See Impotence
  - Intercourse: See Coitus
  - National Research Council Committee for Research in Problems of, 492
  - Offenses: See Prostitution
  - Organs: See Genitals
- SEXUAL STERILIZATION: See Sterilization, Sexual
- SHELLFISH: See Clams
- SHERMAN Antitrust Act violation by trade in surgical dressings, 52
- SHINGLES: See *Herpes zoster*
- SHIPS: See also Navy
  - *gastroenteritis aboard*, 777—E
  - liberty ship named in honor of Sir Frederick Banting, 1294
  - motion sickness, mechanism, [Morton] 1306—ab
  - transportation of mosquitoes in old tires filled with water, [Pratt] 725—ab
- SHOCK, Allergic: See Anaphylaxis and Allergy
  - burn, inject isotonic salt solution for, [Berman] 348—ab
  - Electric: See Electric shock

RECTUM—Continued
  cancer, surgical cure, preserve anal sphincter function, [d'Allaines] 729—ab
  hemorrhage, rutin and sulfonamides incompatible [Kushlan] 716—C
  hemorrhage, rutin therapy of telangiectasia, 247—E
  pain, proctalgias [Granet] 127—ab
  Suppositories: See Suppositories
  surgery, new hemostatic dressings for, [Rosser] 893—ab
RECUMBENCY, Early rising After Operation, etc See Convalescence
RECURRENT Fever See Relapsing Fever
RED CELLS: See Erythrocytes
RED CROSS, Swedish, *home for tuberculous* children, 712
  Swiss, chief resigns, 878
RED CROSS, AMERICAN, in 1922, [Fishbein] ★929
  blood bank program, 415, 945—OS
  blood donor service (new), N Y., 955
  drive for funds, 638
  health education by, 1289
  Senate gives chapters greater voice in affairs, 788—OS
  spends $730,000 000 in 7 years, 327—OS
  surplus plasma distributed by, 482—OS
REDUCING Treatment See Obesity
REED, C. A. L, *resigns from A M A. Committee* on Medical Legislation, [Fishbein] ★763
REED (Walter) Medal See Prizes
REFLEX, Carotid Sinus See Carotid Sinus syncope
  conditioned, aversion treatment of alcoholism, [*Shanahan*] 135—ab
  conditioned, Pavlov's studies, 713
REFRIGERATION Anesthesia See Anesthesia
  surgical, and tissue preservation [Crossman & Allen] ★377, [Pernworth] 1308—ab
REGISTER, Registry See Cancer, Chorionic Carcinoma Tuberculosis
REHABILITATION, after chest surgery, 1029
  aural, center opened, Washington, D C, 408
  hearing and speech, program, Ill, 561
  hospital for spastic children, 256
  Institute of, campaign to raise $2,000,000, 50
  National Council on, 708
  of patients with injury to spinal cord (motion picture review), 1033
  vocational, in Illinois, [Pearson] 501—ab
  Vocational Rehabilitation Act, additional training under, 113
REITER'S SYNDROME and pleuropneumonia-like organisms, [Wallerstein] 137—ab
RELAPSING FEVER, louse borne, penicillin for [Ingraham] 207—ab
RELEASE of Medical Officers: See World War II medical officers
RENAL See Kidneys
  Glycosuria See Glycosuria
  Rickets. See Osteodystrophy, renal
RENDU-Osler-Weber Disease See Telangiectasia
RENIN in cardiac failure, [Merrill] 421—ab
  in essential hypertension, [Taquini] 61—ab
REPRODUCTION See also Contraception, Fertility, Pregnancy; Sterility
  of rats given caffeine, [Bachmann] 202—ab
RESEARCH See also Animal Experimentation Science, under specific headings as Cancer
  approach to 306—ab
  center (medical) U S P H S seeks, 45—OS
  clinical, cost, Therapeutic Trials Committee report, ★30
  clinical, Western Society for, organized, 336
  continued need for, 184—OS
  defense in 1900, [Fishbein] ★533
  Fellowships. See Fellowships
  Grant for See also Foundations
  grant in endocrinology by National Research Council, 118
  grants for by National Advisory Health Council, 1289
  Institute for Tropical Medicine, Liberia, 192
  medical, A. M A Council on Defense of, [Fishbein] ★691, ★763
  medical, Childs Memorial Fund for, 1231
  medical, Committee on, of OSRD, accumulated records, 1295
  medical, German, unpublished, 416
  medical long range program by National Research Council, 1289
  medical, nationwide, organization for, 187
  medical, Oklahoma Foundation, 414
  medical progress and, 400—E
  Medical Research Council: See Medical Research Council
  National Research Council See National Research Council
  needs in nutrition, [Jeans] ★245
  nuclear, for medical and public health work, 327—OS
  prisoners act as guinea pigs in German camps, Dr Ivy's report, 35; [Wertham] 645—C
  Prizes for: See Prizes
  program of U S government, 462—ab
  Scandinavian cooperation in, 421
  science and U. S government, stable relations reported by Dr Bush, 250—OS
RESEARCH—Continued
  Seaman Fund for in bacteriology and sanitary science, 415
  wartime, Truman thanks scientists for, 327—OS
RESIDENTS AND RESIDENCIES: See also Fellowships; Interns and Internships
  additional, approved by A M. A, ★1078
  in federal hospitals, ★1080
  in hospitals 944—OS; ★1078
  in specialties, evaluation, cooperation of specialty boards, ★1081
  in veterans hospitals; work by medical schools, 855—E, (*round table discussion*) [various authors] 856—ab; ★1081
  9-9-9 Program: See Interns and Internships
  opportunities, statement by Dr Johnson (Joint Committee report), 41
  program for physician veterans (Joint Committee report), 42
  training, facilities for, ★1080
  training in applied basic medical sciences, 697—E, 717
  training in neurology, 186
RESORCINOL See Hexylresorcinol
RESORTS See Health resorts
RESPIRATION, anoxia and, in aviators, [Behnke] ★453
  Artificial See Respirator
  breathing exercise, rehabilitation after chest surgery, 1029
  Disorders See Asphyxia
  hyperventilation to induce migraine, (reply) [Foldes] 280
  intrauterine, of fetus, [Windle & Becker] 125—C
  liquid oxygen converter for breathing purposes 559
  pulmonary ventilation vs carbon monoxide in high altitude flight, [Behnke] ★454
  sounds phonograph recordings, [Stokes] 429—ab
  spirometry in Besnier-Boeck-Schaumann's disease [Leitner] 730—ab
RESPIRATOR A M A Council refuses to recognize term "iron lung" 936
RESPIRATORY METABOLISM See Metabolism basal
RESPIRATORY SYSTEM *See also* Bronchus; Lungs Pleura Trachea
  Disease See also Bronchiectasis, Lungs; Pneumonoconiosis
  disease, streptococcus and nonstreptococcic, [Rantz] 132—ab
  disease (acute), Commission on, tonsillitis and pharyngitis of unkonwn cause, ★588
  Infection See Colds Influenza; Pneumonia Tuberculosis of Lungs
  tumor cells spread via, [Furth] 268—ab
REST: See Sleep
  Bed early rising after operation, etc.: See Convalescence
RESTAURANTS drive to clean up, Chicago, 255 875
  health department closes five, N Y, 1229
RETAIL trading areas principles applied to study of medical service, 1011—E; [*Dickinson*] ★1014
RETINA: See also Retinitis
  central angiospastic retinopathy; psychosomatic disorders [Harrington] ★672
  stimuli motor component 713
RETINITIS pigmentosa, tissue therapy, [Lipkina] 652—ab
RETINOBLASTOMA, heredity; evidence in 2 families [Falls] ★171
RETIREMENT See Army, U S: Professors
RETROBULBAR Neuritis See Nerves, optic
REVISTA See Journals
REYBURN, ROBERT, case history of President Garfield, [Fishbein] ★389; ★390
RH Factor, 577
  blood laboratory set up, Washington, D. C., 181—OS
  blood typing, Conn, 636
  federal biologics regulations revised and expanded, 855—E
  in newborn and erythroblastosis, [Hill] 201—ab
  interaction of spinal fluid and, [Jakobowicz] 805—ab
  isoimmunization, [Philpott] 1035—ab
RHEUMATIC FEVER, acute, salicylates effect on, [Warren] 61—ab
  Cardiac Complications See Heart disease (*rheumatic*)
  diagnosis, criteria, [Griffith] ★974; (in young adults) [Sokolow & Snell] ★981
  diagnostic centers, Mich, 335
  frequency, [Harring] 806—ab
  Herrick House for convalescent children, Ill, 636
  Institute for Study of, at Northwestern U., 791
  treatment: salicylates, oxygen, diuretics, sulfonamides, penicillin, vitamins, iron, fever, roentgen therapy, blood plasma, serums and vaccines climatotherapy and physiotherapy, [Griffith] ★974
RHEUMATISM See also Arthritis
  Acute Articular. See Rheumatic Fever
  chronic, copper salts in, [Forestier] 1317—ab
RHEUMATISM—Continued
  Desert See Coccidioidomycosis
  Empire Rheumatism Council, (10th anniversary) 52; (study cause of rheumatoid arthritis) 341
  facial paralysis, [Bergstrom] 1318—ab
  treatment, penicillin, France, 55
  Trubek fellowship in rheumatic disorders, N. Y, 49
RHEUMATOID Arthritis. See Arthritis
  Spondylitis: See Spine
RHINITIS, Vasomotor: See Hay Fever
RHINOPHARYNX: See Nasopharynx
RHINOSCLEROMA, [Reyes] 269—ab
RHUS dermatitis, [Turner] 1304—ab
RIB See Ribs
RIBOFLAVIN See also Pellagra
  allergy, 434
  N N R, (Harrower) 619
RIBS, fracture, pneumonia after, [Phillips] ★161
RICH Report, question of publication (Reference Committee report), 38
RICKETS, Renal See Osteodystrophy, renal
RICKETTS, HOWARD TAYLOR, death, 1910, [Fishbein] ★764
RICKETTSIA: See also Q Fever, Rocky Mountain Spotted Fever, Typhus
  Disease (New): See Rickettsialpox
  disease, specificity of Weil-Felix reaction, 358
RICKETTSIALPOX [Huebner] 272—ab; [Greenberg & others] ★901 (correction) 1231
RIEDEL'S Lobe: See Liver
RIGGS Foundation See Foundations
RIMOLDI, HORACIO J. A, to study in U S, 258
RINGWORM of Scalp See Tinea capitis
RISING, Early, after Operation, etc: See Convalescence
RIVERS, water pollution control bill, 1219—OS
  water pollution construct plant to eliminate, Illinois, 1292
ROCKEFELLER Foundation See Foundations
ROCKET, insects survive flight into ionosphere by, 874—OS
ROCKY MOUNTAIN SPOTTED FEVER, diagnosis (differential) from rickettsialpox, [Greenberg & others] ★904
  grant to study tick fever, 1291
  treatment, *p*-aminobenzoic acid, [Ravenel] ★989
RODENTS See also Mice, Rats
  poliomyelitis transmitted to, 1217—E
  war on, continuation, 871—OS
RODMAN, W L, National Board of Medical Examiners, 1915, [Fishbein] ★837; ★839
ROENTGEN RAYS apparatus (portable), sale of, 559
  bone age studies and hypothyroidism, [Dutton] 965—ab
  burns, sulfhydryl treatment, [Cruthirds] 131—ab
  Diagnosis See also Roentgenography (cross reference)
  diagnosis in tuberculosis, compare photofluorographic and other methods, [Birkelo & others] ★359, 399—E, [Kornat] 963—C
  diagnosis, stereoroentgenograms in esophageal leiomyoma, [Schafer & Kittle] ★1202
  Irradiation See *Roentgen Therapy*
  pharmacoradiographic agent: insulin, 420
  technicians, schools for, approved by A M A, ★1144
  technicians, statistics on in hospitals, ★1077
ROENTGEN THERAPY See also Bursitis; Hemophilia, Spine arthritis
  contact, in rectal cancer, [Gros] 651—ab
  deep, centers for, by Army Medical Department, 329
  in pregnancy cause congenital malformations, [Keitel] 716—C
  intravaginal cones for [Taylor] 130—ab
  ionization measurements with bone chambers, [Stenstrom] 887—ab
  near distance, Chaoul's modified method, [Arho] 142—ab
ROENTGENOGRAPHY: See Arteries *roentgen* study; Gallbladder, roentgen study, Lungs, *roentgen study*, Peptic Ulcer diagnosis; Pyelography, Roentgen Rays diagnosis
RONGETTI, AMANTE, sentenced for practicing without license, 1023
ROSENBERGER, J. L, abstracts of medicolegal *decisions, 1893, [Fishbein]* ★389
ROSENSTOCK Foundation See Foundations
ROTHSCHILD Lecture. See Lectures
ROULEAUX Formation See Erythrocytes
ROUNDWORMS: See Ascaris, Ascariasis
ROVIN, ALEXANDER M, interest *in pyogen*, (Joint Council report) 694
ROVSING'S Sign, rebound tenderness in abdominal disease, 508
ROYAL: See also British, England
  College of Nursing, 1029
  College of Surgeons, (overseas examinations *for fellowship*) 121; (report) 261; (conflict on National Health Service Act) 419; 643
  Colleges (controversy on National Health Service, England) 419, 643
RUBBER balloon, dermatitis due to, 1174
  gloves, dusting powders for, 1218—E
  gloves, talc granuloma, [Lichtman] 206—ab

RUBBER—Continued
  manufacture, prevent dermatitis in, 1254
  tires filled with water, mosquitoes transported in, 559; [Pratt] 725—ab
RUBELLA, maternal, cause of deaf-mutism in child, 1012—E
  maternal [illegible] child, [Hopkins] 1316—ab
  maternal [illegible] 1316—ab
  thrombocytopenic purpura after, [Magnusson] 968—ab
RUBEOLA: See Measles
RUBINOW, I. M., A. M. A. committee report on social insurance [Fishbein] *836 ff., *923
RUFUS, HOWARD C., personal, 409
RUPTURE: See Hernia; under name of organ as Kidneys; Spine, intervertebral disk; Spleen
RURAL COMMUNITIES: See also Farmers
  health centers and hospital facilities for, [Weagley] 781—ab; [Davis] 860—ab; (Committee report) 860—ab
  health, Committee on Health Council as Agency for Promoting, [Jones] 864—ab
  health, National Conference on, (program) 326—OS; (proceedings) 778—OS; 860—OS
  health problems, Turkey, 1236
  health, survey, Conn., 636
  medical facilities available, Virginia, 251—OS
  medical prepayment plans as they apply to, [Mertz] 782—ab
  medical prepayment plans, experience with Blue Cross, [Helsby] 407
  medical service, A. M. A. Committee on, (report) 37; (questionnaire) 941—OS; 945—OS
  medical service program and the farmer, [Goss] 778—ab
  medical service (Joint Committee report), 44
  medical service, (Reference Committee report), 37
  nursing needs, committee report, [Sewell] 863—ab
  physicians for, methods of bringing and holding, [Humphrey] 778—ab; [Starr] 779—ab; [Mulholland] 861—ab
  physicians for, scholarships to provide, (Indiana) 489; (Illinois) 706
RUSH, BENJAMIN, monument, [Fishbein] *311; *315; *316; *468; *469; *613; *682
RUSSIA, cancer treatments from, 111—E; 122; [Gross] 800—C; [Klyuvea] 1038—ab
  foreign letter from, 122; 713; 1235
  training 1,980,000 technicians in 5 years, 788—OS
  visiting scientist returns to Moscow: V. V. Parin, 638
  visitors (physicians) to India, 1235
  visitors to Stockholm, 421
RUTIN, incompatible with sulfonamides, [Kushlan] 716—C
  treatment of hereditary hemorrhagic telangiectasia, 247—E

S

S-140: See Demerol
S. 140: See Taft-Fulbright Bill
S. 1606: See Wagner-Murray-Dingell Bill
SACRAL CANAL, Injection Into: See Anesthesia, caudal
SADDLE Block: See Anesthesia
SAFETY: See also National Safety Council
  code (new) for anesthesia apparatus, England, 797
ST. JOHN'S bread (powdered) treatment of diarrhea, [Rohmer] 729—ab
SALARIES: See Income; Wages
SALESMEN, Fraudulent: See Impostors
SALICYLATES: See also Acid, acetylsalicylic
  effect on acute rheumatic fever, [Warren] 61—ab
SALIVA, sialorrhea and morphine addiction, 899
SALT: See also Sodium chloride
  deficiency in sprue, [Black] 352—ab
  diet low, in congestive heart failure, [Wheeler & others] *16; (early work of Hermann Strauss in 1902), [Gossels] 497—C
  iodized, and goiter; amend Food, Drug and Cosmetic Act; A. M. A. Council decision, 620—E
  iodized, federal law proposed, 1161
  mobilization of salts from skeleton; lability of bone, 110—E
  water metabolism, disturbance in hypertension, [Perera] 499—ab
SAN JOAQUIN Valley Fever: See Coccidioidomycosis
SANITATION: See also Health; Hygiene
  Industrial: See Industrial Hygiene
  lacking in restaurants, (Chicago) 255; 875; (New York) 1229
SANO, 568—BI
SARCOIDOSIS, electrocardiographic and spirometric study, [Leitner] 730—ab
  simulating glomerulonephritis, [Klinefelter] 722—ab
  symptom of tuberculosis, [Cameron] 207—ab
  uterine changes in, [Engelhard] 70—ab
SARCOMA: See under organ or region affected as Bones; Breast; Urea
SARDINES, embargoed, food poisoning from, 50; 877
SAVINGS: See Investments
SCALDS: See Burns
SCALENOTOMY: See Muscles
SCALENUS Anticus Syndrome: See Muscles
SCALP: See also Alopecia; Hair; Head
  Dr. Marshall's Medications, 568—BI
  Ringworm of: See Tinea Capitis
SCANDINAVIAN cooperation in research, 421
SCAPULA: See Shoulder
SCAR: See Cicatrix
SCARLET FEVER, treatment, penicillin, [Jennings] 1303—ab
  treatment, penicillin effect on evolution of, 960
  treatment, penicillin to prevent acute otitis media, [Weiss] 206—ab
  treatment, penicillin, vs. antitoxin and symptomatic therapy, [Hirsh & others] *657
  treatment, penicillin, vs. convalescent serum and sulfonamides, [Hoyne & Brown] *661
  when to discharge patients, Denmark, 961
SCHAFFNER'S "Little Doc" Jr. First Aid Kit, 883—BI
SCHAUMANN-Besnier-Boeck Disease: See Sarcoidosis
SCHERING Award: See Prizes
  Corporation, government profits from, 556—OS
SCHISTOSOMIASIS, Asiatic, [Warren] 1311—ab
  Asiatic, latent phase, [Mason] 888—ab
  diagnosis, cercarial antigens for intradermal test, [Alves] 69—ab
  japonica in Leyte reoccupation, fuadin for, [Winkenwerder] 1242—ab
SCHIZOPHRENIA: See Dementia Precox
SCHIZOTRYPANUM cruzi: See Trypanosoma cruzi
SCHOLARSHIPS: See also Fellowships
  established, Ky., 189
  for study of eye diseases, N. Y., 50; 637
  National Society for Prevention of Blindness, 794
  regional, at Washington, 413
  to provide rural physicians, (Ind.) 489; (Ill.) 706
SCHOOLS: See also Education; Students; University
  Children: See Children, school
  for food handlers, Ga., 489
  for Medical Record Librarians: See Medical Record Librarians
  for Technicians: See Occupational Therapy; Physical Therapy; Roentgen Rays; Technologists
  health and physical fitness project of A. M. A., 945—OS
  health challenge of our schools, 696—E
  health education, W. Va., 491
  health program, body measurements, [Stuart] 719—ab
  health program, Fla., 561
  hygiene, congress of, France, 52; 118
  National School Health Services Act, 632—OS
  of Nursing: See Nursing
  Summer School of Alcohol Studies at Yale, 636
  Teachers: See Teachers
SCHOOLS, MEDICAL: See also Education, Medical; Students, Medical; University; under names of specific schools
  Association of American Medical Colleges, (survey by) 109—E; 945—OS; (plan for uniform intern placement) 267
  Curriculum: See Education, Medical
  deans' committees, residencies in veterans hospitals, 855—E; (round table discussion), 856—ab
  deanships, unprecedented turnover in, 492
  financing, 1158—E
  graduate, of College of Medical Evangelists, 115
  in Spain, 343
  new, founding, [Weiskotten] *1045
  new undergraduate, proposed, Palestine, 416
  rating by A. M. A., 1910, [Fishbein] *763
  responsibilities to a community, [Greene] *1053
  statewide committee on behalf of, [various authors] 629—ab
  survey, *109—E*; *945—OS*
  U. S. Army Medical Department Research and Graduate School, 789
  U. S. Navy School of Aviation Medicine and Research, 488
  U. S. Navy School of Tropical Medicine, new, Guam, 331
SCIATICA, acute rheumatic, stretching sciatic nerve in, [Cammaert] 968—ab
  herniated disk and, [Thiebaut] 430—ab
SCIENCE: See Journals
SCIENCE: See also Research
  Basic: See Basic Science
  board (presidental), Powers named to presidental scientific board, 185—OS
  Medical: See Medicine
  National Science Foundation, 180—E; 184—E; 328—OS; 1161
  UNESCO, Paris conference, 342
SCIENTIFIC Exhibit: See American Medical Association
  Tests: See Medicolegal Abstracts at end of letter M
SCIENTISTS, Truman thanks, for wartime research, 327—OS
SCLERODERMA, treatment, 578
  treatment, promin, [Wuerthele] 1312—ab
SCLEROMA: See Rhinoscleroma
SCLEROSIS: See also Arteriosclerosis; Blood Vessels: Liver cirrhosis; Otosclerosis
  multiple, Association for Advancement of Research in, 878
  multiple, dicumarol for, [Putnam] 1306—ab
  multiple, what do we know of? [Reese] 201—ab
SCOTOMA, angioscotoma in prolonged mild anoxia, [Smith] 1308—ab
SCROTUM Hernia: See Hernia
SCRUB Typhus: See Tsutsugamushi Disease
SCURVY, anemia in, [Wade] 64—ab
  vertigo and, [Ohnell] 430—ab
  treatment, vitamin C, [Schnurman] 1036—ab
SEA Vegecene, 883—BI
  Vegetable Tablets, West's Imported, 883—BI
  Vegetables Vitaminized with Added Vitamin A, 883—BI
SEASICKNESS: See Motion Sickness
SEALS, A. M. A., use of, 112—OS: 321
SEAMAN Fund: See Foundations
SEA-Sol, 883—BI
SEA-V-Aid, 883—BI
SEA-Vo-Kra, 883—BI
SEBACEOUS Cyst: See Steatoma
SEBORRHEA and pilocarpine, 577
SECONAL sodium, convulsive seizures after barbiturate withdrawal, [Osgood] *104
SECRETARIES: See Societies, Medical
SECURITIES: See Investments
SECURITY: See Social Security
  U. S. Department of: See Taft-Fulbright Bill
SEDATIVES and postoperative vomiting, 810
SEDIMENTATION Rate: See Blood
SEEING-eye Dogs: See Dogs
SEIZURES: See Convulsions; Epilepsy
SELECTIVE SERVICE: See World War II; Medicolegal Abstracts at end of letter M
SELF-MEDICATION: See also Nostrums
  of benadryl, danger, [Borman] *394
SEMEN: See Spermatozoa
  Artificial Insemination: See Impregnation, artificial
SEMICARBAZONE, 5-nitro-2-furaldehyde, use in dermatology, [Downing & others] *299
SEMINOMA: See Dysgerminoma
SENILITY: See Old Age
SENSATION: See Paresthesia
SENSES: See Hearing; Taste; Vision; etc.
SENSITIVITY: Sensitization: See Anaphylaxis and Allergy
SEPTICEMIA: See Meningococcemia
SERODIAGNOSIS: See Syphilis; Trichinosis; Typhus
SERUM: See also Biologic Products; Vaccine
  Antireticular Cytotoxic: See Bogomolets
  Blood: See also Serum, plasma; etc. and subheads under Blood
  blood, where obtain antiserum for measuring antibodies in? 810
  Convalescent: See Scarlet Fever
  plasma (human), (Council discusses), 850
  plasma (human), storage in liquid state, [Lozner] 349—ab
  plasma (surplus), distribution by American Red Cross, 482—OS
  plasma, toxicity of phenyl-mercuric borate used to preserve? 214
  Plasma,, Transfusion of: See Blood Transfusion
  plasma, treatment of epidemic keratoconjunctivitis and keratitis, 508
  Reaction: See Anaphylaxis and Allergy
  regulations, revision and expansion of, 855—E
  Sickness: See Anaphylaxis and Allergy
SERVICE, Physicians Separated from the Service: See World War II, Medical Officers
SERVICEMEN: See Veterans; World War II
  Readjustment Act: See G. I. Bill of Rights
SEWAGE system, new (2), Ill., 954
  pollution of rivers, bill to control, 1219—OS
SEX: See also Fertility; Reproduction; Sterility
  Desire: See Libido
  Function, Decline of: See Menopause
  function in men, prolonged use of barbiturates affect? 279
  Hormones: See Androgens; Estrogenic Substances; Gonadotropins
  importance of donors and recipients in transfusion, [Hustin] 1038—ab
  Impotence: See Impotence
  Intercourse: See Coitus
  National Research Council Committee for Research in Problems of, 492
  Offenses: See Prostitution
  Organs: See Genitals
SEXUAL STERILIZATION: See Sterilization, Sexual
SHELLFISH: See Clams
SHERMAN Antitrust Act violation by trade in surgical dressings, 52
SHINGLES: See Herpes zoster
SHIPS: See also Navy
  gastroenteritis aboard, 777—E
  liberty ship named in honor of Sir Frederick Banting, 1294
  motion sickness, mechanism, [Morton] 1306—ab
  transportation of mosquitoes in old tires filled with water, [Pratt] 725—ab
SHOCK, Allergic: See Anaphylaxis and Allergy
  burn, inject isotonic salt solution for, [Berman] 348—ab
  Electric: See Electric shock

SHOCK—Continued
  Insulin: See Insulin
  local, sympathetic procaine block for, [Thomson] 66—ab
  Therapeutic: See Electric shock: Insulin shock
  traumatic, vitamin C in, [Holmes] 649—ab
  traumatic: wound, [Stewart] *216
  treatment of curare and its substitute, bebeerine dimethylether methochloride, 882
  Wound: See Shock, traumatic
SHORT WAVE: See Diathermy
SHOULDER: See also Clavicle
  bursitis, roentgen therapy, [Young] 500—ab
  bursitis, subacromial [Olin] 1245—ab
  lesions of musculotendinous cuff, [Gunning] 429—ab
SHOVELER'S disease, [Wetzel] 652—ab
SIALORRHEA: See Saliva
SICK: See Patients
  Headache: See Migraine
SICKLEMIA: See Anemia, sickle cell
SICKNESS: See Disease; Health; Therapeutics
  Convalescence from: See Convalescence
  Insurance: See Insurance, sickness
  Rate of: See Vital Statistics
  Serum: See Anaphylaxis and Allergy
SIGHT: See Vision
SILICOSIS: See Pneumonoconiosis
SILVER nitrate to prevent blindness, A.M.A. propaganda for, 1908, [Fishbein] *689
  Star: See World War II, Heroes
SIMMONS, GEORGE H., [Fishbein] (permanent secretary, 1895-1899) *391; *464; (employed as Journal editor and secretary, 1898) *472; *473; (history of A.M A. 1902-1904) *605; (publication of A.M.A. directory; tribute to) *682; *685; *687; (reply to attack on A.M.A.) *686; (tribute to his honesty and integrity) *688; *689; (secretaryship report) *762; (attacks centered on, in 1910) *762; (resignation, 1923) *930; (retirement, 1924) *932
SIMS, J. MARION, address, 1876, [Fishbein] *175
SINGULTUS: See Hiccup
SINUS, Pilonidal: See Pilonidal Sinus
SINUSITIS, NASAL, Trapper's Preparation for Sinus, 264—BI
  treatment, (modern), [Hunnicutt] *84
SITTING posture, peroneal palsy from crossing legs, [Nagler & Rangell] *755
SKELETON: See Bones
SKIN: See also Dermatology; Tissues
  Burn: See Burns
  cancer, near distance roentgen therapy (Chaoul's), [Arho] 142—ab
  Cleansing: See Detergents; Soap
  diphtheria, [Livingood] 892—ab
  Disease: See also Acne; Dermatitis; Scleroderma; Skin infection; Urticaria
  disease, furacin for, [Downing & others] *299; [Morin] 963—C
  Disease (Industrial): See Industrial Dermatoses
  disease, penicillin ointment for, [Wright] 1305—ab
  Eruptions: See Eruptions
  Exfoliation: See Dermatitis exfoliativa
  graft (composite free) [Brown] 720—ab
  graft (full thickness) to repair urethra in hypospadias, 970
  graft, implant cadaver skin plus aloe in retinitis, [Lipkins] 652—ab
  graft, thickness, [Padgett] 268—ab
  Hemorrhage: See Purpura
  infants, anergy to diphtheria, [Wright] 573—ab
  Infection: See also Carbuncle; Furunculosis
  infection, neurologic disease after, [Bronson] 500—ab
  infection (pustular), prevention in newborn, [Weymuller & others] *81
  infection (pyogenic), penicillin for, [Hopkins] 886—ab
  Inflammation: See Dermatitis
  Itching: See Eczema; Pruritus
  Leishmaniasis: See Leishmaniasis
  Peeling: See Dermatitis exfoliativa
  Rash: See Eruptions
  Reaction: See also Anaphylaxis and Allergy; Skin test; Tissues reaction; Tuberculin; Urticaria
  reaction to BCG cultures, [Civeira] 503—ab
  test reagent for whooping cough standardized, [Felton] 892—ab
  tests in trichinosis, [Roth] 968—ab
  Transplantation: See Skin graft
  Ulcers: See Ulcers
SKULL: See Cranium
SKYSCRAPERS: See Buildings
SLAUGHTER house, Q fever in U. S., [Topping & others] *813; [Irons & Hooper] *815; [Irons & others] *819; [Cox & others] *820
SLEEP, hypnagogic hallucinations in drowsy period before, 1253
  Induced: See Anesthesia
  producing drugs, U. S. officials puzzled by large consumption, 405—OS
  prolonged, induced in treatment of pain, [Kaminski] 431—ab
SLEEPING Sickness: See Encephalitis, Epidemic
SMALLPOX, diagnosis (differential) from rickettsialpox, [Greenberg & others] *904

SMALLPOX—Continued
  epidemic, Rangoon, 878
  incidence, U. S., 191
  mortality, 2 deaths, N. Y., 1228
  Vaccination: See also Vaccinia
  vaccination certificates, requirements for Philippines, 709
  vaccinations (1,646 successful) on troop ship, 183—E
SMEAR: See Vagina
SMELL: See Odor
SMITH, MORRIS K., personal, 790
SMITH Lecture: See Lectures
SMITH-Taft-Ball Donnell Bill: See Taft
SMOKE, dust, and sunshine, Chicago, 334
SMOKING: See Tobacco
SNIJDERS, E. P., retires, Netherlands, 712
SNYDER, L. H., prevention of genetic disease, 547—E
SOAP: See also Detergents
  Medrex, 422—BI
  Ranier Natural, 568—BI
  sensitivity in eczema, [Beek] 895—ab
  shortage, Netherlands, 713
SOCIAL Insurance: See Insurance
  Medicine: See Socialized Medicine (cross reference)
  Security: See also Insurance, sickness; Medical Service Plans; Security (cross reference)
  security and state associations, [various authors] 551—ab
  Security Fund, old age insurance, National Council of Order of Doctors, France, 1231
  security, recommend, Puerto Rico, 1230
  security stressed in economic report, 184—OS
  security, U. S. Dept. of Welfare to handle, 180—E; 184—OS
  Security, Wagner-Murray-Dingell Bill: See Wagner
  welfare, Senator Robert Taft asks billion dollar budget for, 947—OS
  work convention held in San Juan, 1230
  Worker: See also Psychiatry
  worker and long term illness, [Bluestone] *1051
SOCIALIST Medical Association, England, 495
SOCIALIZED Medicine: See Hospitals, expense insurance; Insurance, sickness; Insurance, social; Medical Service Plans; Medicine, state
SOCIETIES, MEDICAL: See also American Medical Association; under names of specific societies; list of Societies at end of letter S
  Airborne Medical Society organized, England, 261
  Annual Conference of Secretaries and Editors (proceedings) 548—OS; 623—OS
  county, [Meadors] 552—ab
  county and state, secretaries, could A.M.A. publish list of annually, 630—OS
  county and state technic to interest physician in, [various authors] 629—ab
  county, Dallas, nontechnical education program, 1229
  county, history of, Alameda, Calif., 1022
  county, Medical Society of County of Kings 125th year, 335
  county, resolution of policies on Blessing Hospital, Quincy, Ill. 489
  in Soviet Union, 122
  New York Academy, centennial, 190; 335
  Northern Medical Association centennial, 257
  Plans for Medical Service: See Medical Service Plans
  Sociedad de Gastroenterologia y Nutricion, 343
  Sociedad Ycateca de Obstetricia y Ginecologia, Mexico, 118
  Society for Vascular Surgery organized, 257
  Society of General Physicians organized, 491
  State: See also Medical Service Plans
  state and county, how to promote public relations, [Various authors] 628—ab
  state, costs of A.M.A. radio dramatizations to, [various authors] 630—ab
  state, function, [Sensenich] 548—ab
  state, history of journals, [Fishbein] *690
  state, home office, [Graham] 623—ab
  state, newspaper advertising and, [various authors] 628—ab
  state, participation in radio network broadcasts, [Bauer] 548—ab
  state, secretaries-editors conference, Pa., 793
  state, social security and income taxes, [various authors] 551—ab; [McDavitt & others] 627—ab
  state, state government and, [Barker] 549—ab
  state, West Virginia lifetime memberships, 491
  too many in 1888, [Fishbein] *316
  Woman's Auxiliary: See Woman's Auxiliary
SODA, Baking: See Sodium bicarbonate
SODEOM, 883—BI
SODIUM Allyl (Methylpropyl Carbonyl) Barbiturate: See Seconal sodium
  Amytal: See Amytal
  ascorbate, 1 (—) histidine monohydrochloride, inject for peripheral vascular disorders, [Wirtschafter & Widmann] *604
  ascorbate, solution, N.N.R., (Rorer) 1009
  bicarbonate, renal regulation of acid-base balance, 777—E
  Chloride: See also Salt
  chloride, excretion in urine, 146
  chloride-glycerin-acetic acid mixture for chemical debridement of burns, 811

SODIUM—Continued
  chloride, isotonic solution in burn shock, [Berman] 348—ab
  p,p'-Diaminodiphenyl-n,n'Didextrose Sulfonate: See Promin
  diet low in, in congestive heart failure, [Wheeler & others] *16; (early work of Hermann Strauss in 1902) [Gossels] 497—C
  fluoride, topical, in dental caries, [Knutson] 573—ab
  Heparin: See Heparin
  Nicotinate: See Acid, nicotinic
  Penicillin: See Penicillin
  Pentothal: See Pentothal
  tetrathionate, in thromboangiitis obliterans, dangers, (council report) 693
  thiosulfate in thromboangiitis obliterans, possible dangers, (Council report) 693
SOIL, Removal of: See Detergents
SOLDIERS: See Army; Veterans; World War II
  Heart: See Asthenia, neurocirculatory
  Medal: See World War II, Heroes
SOLIS-COHEN, SOLOMON, role in A. M. A. history, [Fishbein] *384; (fights for clean advertising) *390; *464; *470
SOMATIC Complaints: See Psychosomatic Medicine
SOMMER Lecture: See Lectures
SOOT fall averages 112 tons per square mile, N. Y. C., 562
SOPER, FRED L., director of Pan American Sanitary Bureau, 714
SOUND: See also Noise
  cardiovascular and respiratory sounds, phonograph recordings, [Stokes] 429—ab
SOUTH AMERICA: See also Inter-American; Latin America; Pan America
  Congress of Neurosurgery (2nd), 258
SOVIET Russia: See Russia
SPANISH American War, 1898, [Fishbein] *471
  Hispano-American Ophthalmology Society assembly, (24th) 567
  Hispano-Portuguese Dermatology Congress (1st), 566
  Hispano-Portuguese Urology Congress (5th), 567
  moss, California, antibiotic from, [Marshak] 1245—ab
SPAS: See Health resorts
SPASM: See also Cramps; Tetany
  ciliary, psychosomatic disorders, [Harrington] *670
  diagnosis, curare to differentiate from organic changes, [Jones] 139—ab
  proctalgias and perianal dyscrasias, [Granet] 127—ab
  treatment. curare, bebeerine dimethylether methochloride, 882
  treatment, curare in acute backache, [Schlesinger] 499—ab
  treatment, neostigmine in rheumatoid arthritis, [Wramner] 1248—ab
SPEAKERS: See also Speech
  Bureau, (Reference Committee report), 36
  Service, N. Y., 335
SPECIAL Formula Tablets #2, 568—BI
SPECIALISTS: See also under types of specialists
  Certification: See American Board of, examination; Specialties
  increase, Turkey, 1236
  wanted for U. S. government positions, 48
SPECIALIZATION, A. M. A. and, [Fishbein] *847
  A. M. A. Committee on Medical Ethics dealing with, in 1866, [Fishbein] *25
SPECIALTIES: See also under type of specialty as Ophthalmology
  Examining Board: See also American Board
  examining board, cooperation in evaluating residencies, *1081
  examining board for certification of general practitioners, 43; 942—OS
SPECIFIC Pharmaceuticals, Inc., deaths from Analbis Suppositories, 852—E; [Weinstein] 962—C
SPECTACLES: See Glasses
SPEECH: See also Speakers; Voice
  rehabilitation, program, Ill., 561
SPERMATOZOA, development, length of time, 811
  preservation, for use in artificial insemination, 900
  receptivity of cervical mucus to, [Barton] 140—ab
SPHINCTER MUSCLES, anal, preserve function in surgical cure of rectal cancer, [d'Allaines] 729—ab
SPIDER, flax, bite of, [Grille Cendan] 69—ab
SPINAL ANESTHESIA: See Anesthesia, spinal
SPINAL CORD: See also Cauda Equina
  degeneration (possible subacute combined), 278; 1043
  Inflammation: See also Encephalomyelitis; Meningoencephalitis; Poliomyelitis
  inflammation after antirabic vaccine, [Bussell] 728—ab
  injuries by chiropractor, [Pratt-Thomas & Berger] *600
  injuries, convalescent care and rehabilitation of patients (motion picture review), 1033

SPINAL CORD—Continued
  injuries urologic complications [Bumpus & others] ★366, (apparatus used for tidal drainage or irrigation) [MacNeill] 1237—C
  surgery, section for phantom limb, [Browder] 272—ab
SPINAL FLUID See Cerebrospinal Fluid
SPINAL PUNCTURE lumbar reactions to, [Redlich] 649—ab
SPINE See also Ribs
  arthritis, Marie-Strumpell spondylitis [Sokolow & Snell] ★985
  arthritis roentgen therapy of Marie Strumpell spondylitis 74
  cervical rheumatic perispondylitis and cervical syndrome, [Belart] 141—ab, (correction) 377
  dislocation painful spongylolisthesis Albee and Hibbs technics [Puig Guri] 650—ab
  intervertebral disk herniated, and sciatica, [Thiebaut] 430—ab
  intervertebral disk, herniated National Neurologic Congress discuss, 1235
  intervertebral disk ruptured bilateral and multiple, [Echlin] 205—ab
  intervertebral disk, ruptured cervical electromyographic diagnosis [Brazier] 721—ab
  intervertebral disk ruptured simulating angina pectoris 1030
  osteomyelitis (lumbar) in adult, [Freeman] 140—ab
SPIROCHETA Pallida See Treponema pallidum
SPIROMETRY See Respiration
SPLANCHNICECTOMY See Nerves
SPLANCHNOPTOSIS, generalized visceroptosis 279
SPLEEN calcifications in histoplasmin and tuberculin reactors [High] 804—ab
  Enlarged See Splenomegaly
  rupture diagnosis [Bieri] 503—ab
SPLENOMEGALY, treatment, epinephrine 73
SPONDYLITIS See Spine
SPONDYLOLISTHESIS See Spine dislocation
SPONDYLOTHERAPY, Albert Abrams 1911, [Fishbein] ★765
SPONGE gelatin, as hemostatic dressing in anorectal surgery, [Rosser] 893—ab
SPOTTED FEVER See Rocky Mountain Spotted Fever
SPRAY (pyogen) promoted to industry as 'cold cure" (Joint Council report) 694
SPRUE salt deficiency in [Black] 352—ab
  tropical folic acid in [Suarez] 724—ab, [Manson Bahr] 894—ab
SQUASH Beech Nut Junior 937
STAIN picric acid removal from hair 734
STAMPS See Postage Stamps
STANFORD University (establishes eye bank) 875
STAPHYLOCOCCUS diseases due to immunotherapy, [Pettersson] 968—ab
  hemolytic potency of stored penicillin against, [Pelczar] 720—ab
  infection action of brain tissue extract and *penicillin on* [Nutini] 803—ab
  infection bacitracin for [Meleney & Johnson] ★675
  inhibited by inactivated penicillin, [Hunwicke] 727—ab
  pneumonia (primary), penicillin for, [Davis] 1310—ab
  toxin antidotal property Penicillium notatum filtrates 33—E
STARVATION, electrocardiogram in, [Forster] 730—ab
STATE Board See State Board
  Board of Health See Health
  government and state medical society, [Barker] 549—ab
  Hospitals See Hospitals
  Legislation See Laws and Legislation federal and state
  Medicine See Medicine state
  Societies See Societies Medical
  University of Iowa hospital *administration* program 1163
STATE BOARD See also Licensure
  composite and basic science, [various authors] 630—ab
STATISTICS See Vital Statistics
STATUS Thymicolymphaticus See Thymus
STATUTE of Limitations See Medicolegal Abstracts at end of letter M
STEAM inhalations value for colds 1174
STEATOMA, infected sebaceous cyst bacitracin for [Meleney & Johnson] ★677
STEINBERG, A J, bridge champion 788—OS
STERILITY See also Fertility, Impotence, Reproduction
  American Society for Study of, 1st conference, 191
n, [Rubin] 726—ab
berculosis in wo
  Inducing See Sterilization, Sexual
  male of nonendocrine origin, endocrine therapy valueless [Weisman] 198—C
  receptivity of cervical mucus to spermatozoa, [Barton] 140—ab
  Treatment See Impregnation, artificial
STERILIZATION BACTERIAL See also Bactericides, Milk pasteurization
  of Air See Air disinfection
  of metal instruments, isopropyl alcohol for 734
STERILIZATION, SEXUAL, vasectomy and tubal ligation as contraceptive, 1254
STERNBERG biography, [Fishbein] ★818
STEVENSON, SARAH HACKETT, first woman member of A M A, [Fishbein] ★175
STIBAMINE glucoside treatment of tuberculosis, [Rose] 269—ab
STIBOPHEN See Fuadin
STIES See Sty
STILBAMIDINE treatment of multiple myeloma, [Snapper] 64—ab, ★156
STILBESTROL See Diethylstilbestrol
STILL GEORGE A, osteopathic challenge in treating pneumonia, *[Fishbein]* ★929
STING See Bees
STOCK See Animals
STOCKS See Investments
STÓCKEL-Gobell's Operation See Urine incontinence
STOLL, ARTHUR, honored 709
STOLZ HAROLD F, personal 488
STOMACH See also Gastrointestinal Tract
  acidity, achlorhydria 278
  cancer, Besredka's theory of immunity, 111—E
  cancer, conference on, by Gastric Cancer Committee, 187
  cancer, incidence, *diagnosis,* [*Maimon*] 206—ab
  cancer, resectability, mortality, [Maimon] 205—ab
  cyst (intrathoracic), [Dickson] 138—ab
  dried, use to avoid allergy to liver extract, [Sullivan & Broun] ★178
  Hemorrhage See also Hematemesis, Peptic Ulcer
  hemorrhage rutin and sulfonamides incompatible [Kushlan] 716—C
  hemorrhage rutin therapy 247—E
  lavage, value in acute poisoning 545—E, (technic described) [Kantor] 1238—C
  Surgery See Peptic Ulcer, surgical treatment, Stomach cancer
  Ulcer See Peptic Ulcer
STOMATITIS, ulcerative (reply) [Stern] 146
  Vincent's See Angina, Vincent's
STONES See Calculi (cross reference)
STOOLS See Feces
STORAGE See Penicillin, Serum plasma
STRAPPING See Adhesive
STRAUSS, Hermann work on low salt diet in congestive heart failure in 1902 [Gossels] 497—C
STREPTOCOCCUS, anaerobic, multiple pyogenic liver abscesses, penicillin cures [Michel & Wirth] ★395
  Carrier See also Streptococcus, hemolytic
  carrier penicillin for, [Jennings] 1303—ab
  fecalis urinary tract infection streptomycin for [Adcock & Plumb] ★579
  hemolytic, advances in study of, 322—E
  hemolytic, nasal carriers, [Lemon] 137—ab
  Infection See also Rheumatic Fever, Scarlet Fever
  infection bacitracin for, [Meleney & Johnson] ★675
  infection of respiratory tract [Rantz] 132—ab
  infection of throat, [Commission on Acute Respiratory Disease] ★588
  S B E, endocarditis caused by, [Loewe] 62—ab
  sulfonamide sensitivity of after using sulfadiazine, [Hartman] 723—ab
STREPTOMYCIN, antidotal property, 960
  N N R, (description) 320, (Abbott, Merck, Pfizer), 321
  supply, allocation to Veterans Administration increased, 787—OS
  supply, controls, President asks continuance, 482—OS
  supply, federal certification and inspection 484—OS 871—OS
  titration by quick method of Janus green, 960
  toxicity, [Madigan] 1246—ab
  toxicity, otic complications [Fowler & Seligman] ★87
  toxicity, pathologic changes [Mushett] 1242—ab
  Treatment See also Cholera, Intestines infections Meningitis Peritonitis, Pyle thrombophlebitis, Tuberculosis, Tuberculosis of Lungs, Tularemia, Urinary Tract infections, Wounds
  treatment clinical tests by Medical Research Council England 1234
  treatment in Army hospitals, [DeBakey] 1036—ab
  tubercle bacillus growth retarded by [Corper] 207—ab
STRIAE breast, diagnostic significance, 358
STRIKES See Physicians
STRUMA See Goiter
  Ovarii See Thyroid tumor
STUDENTS See also Children, school, Education, Schools, Students Medical, University
  ASTRP See Army, United States, Specialized Reserve Training Program
  Nurses See Nurses
  tuberculous infection, Porto Alegre, 714
STUDENTS MEDICAL See also Interns and Internships, Schools, Medical
  Association of, 337
  Fellowships See Fellowships
  in Paris, 420
  loan fund (Freeman), Woman's Auxiliary cookbook to aid, 877
  loan fund (Jane Todd Crawford), 1230
  loans, applications open, Miss 335 876
  Meek fund aid for superior students, 492
  Prizes for See Prizes
  Scholarships See Scholarships
  supply, 944—OS
  Teaching See Education, Medical
  tuberculosis in [Morris] 62—ab
STUMICAID 883—BI
STY, treatment, bacitracin, [Meleney & Johnson] ★675
SUCCINYLSULFATHIAZOLE treatment of ulcerative colitis, [Collins] 1171—ab
SUCROSE See Sugar
SUCTION sockets artificial limbs with, 703
  tracheobronchial drainage by, [Foregger] *★1200*
SUDECK'S Atrophy See Osteoporosis, posttraumatic
SUGAR See also Dextrose
  excessive use cause diabetes? 734
  in Blood See Blood sugar
  in Urine See Glycosuria
  nutritive value of fats with, [Ershoff] 1304—ab
  of Milk See Lactose
  Research Foundation, prizes for scientific studies, 52
  tolerance tests [O'Brien & Higgins] 197—C
SUICIDES of physicians in 1946 108—E
  sensitivity to amigen, [Ratner] 497—C
SULFADIAZINE, N N R, (Miller) 179
  rutin incompatible with, [Kushlan] 716—C
  toxicity, fixed eruption, [Cole] 720—ab
  Treatment See also Amebiasis, Plague, Pneumonia
  treatment plus penicillin of pneumonia, [Dowling] 1171—ab
  treatment plus penicillin routine use in appendectomy, [Griffin & others] ★907
  treatment, preventive of plague, [Platzer] 206—ab
  treatment, preventive, of posttraumatic pneumonia [Phillips] ★161
  treatment sulfonamide sensitivity of streptococci *after,* [*Hartman*] 723—ab
SULFADITAL, sulfa combination, [Frisk] 1246—ab
SULFANILAMIDE, intrauterine use, [Sadorsky] 890—ab
SULFASUXIDINE See Succinylsulfathiazole
SULFATE, ferrous, harmful effect of prolonged use? 655
SULFATHIAZOLE, Succinyl See Succinylsulfathiazole
  toxicity, asthma [Rosberg] 1248—ab
  toxicity, sensitivity to, and *not* to penicillin [Abram] 1301—C
  treatment, ointment, of wound, [Berczeller] 804—ab
  treatment resistance in gonorrhea increasing, [Nørgaard] 1248—ab
SULFHYDRYL treatment of corneal and x-ray burns, [Cruthirds] 131—ab
SULFOBROMOPHTHALEIN sodium, liver function test [Mateer & others] ★913, (in intravenous liver extract therapy of cirrhosis) [Labby & others] ★1184
SULFONAMIDE COMPOUNDS, effects on fetus, 970
  sensitivity, 435
  sensitivity of streptococci after sulfadiazine *treatment* [Hartman] 723—ab
  Sulfadiazine See Sulfadiazine
  sulfadital, a sulfa-combination, [Frisk] 1246—ab
  Sulfanilamide See Sulfanilamide
  Sulfathiazole See Sulfathiazole
  toxicity, colitis, [Gauss] 719—ab
  Treatment See also Urinary Tract infection, Wounds
  treatment of scarlet fever vs convalescent serum and penicillin, [Hoyne & Brown] ★661
  treatment plus penicillin for peritonitis, [Griffin & others] ★907, [Brown] 1241—ab
  treatment plus penicillin for pneumococcic meningitis, [Ross] 892—ab
  treatment plus penicillin for trachoma, [Lavery] 67—ab
SULFONE See Promin
SULFUR dioxide removal of odor from books [Munkelt] 344—C
SUL RAY *Effervescent Mineral Baths,* 422—BI
SUNLIGHT, Sensitivity to See Light
SUPERIOR Pulmonary Sulcus Tumor See Thorax tumor
SUPPLIES See Medical Supplies
SUPPOSITORIES, Analbis, deaths from, 852—E, [Weinstein] 962—C
SUPPURATION See also Abscess; Ear, external Otitis media, Ulcers, Wounds
  treatment chlorophyll [Bowers] 1240—ab

SUPRARENALS See Adrenals
SUPREME COURT See Medical Jurisprudence
SURFACE TENSION of urine, hexylresorcinol effect on, [Inness-Brown] 1301—C
SURGEONS See also Medicine, profession of; Physicians, Surgery
  American College of, (inspection of American Cancer Society clinics, A M A Committee report) 132 1092, 133 38, (fellowship pledge clause on fee splitting and rebates) [Patek] 715—C, (formation in 1914) [Fishbein] ★770
  Heroic Action of See World War II, Heroes
  Industrial See Industrial Health
  International College of, (purchases headquarters) 1025
  Nordic Association of, Sweden, 1030
  Royal College of (fellowship, overseas examinations for) 121 (report) 261, controversy on National Health Service) 419
  Surgeon General See Army, U S , Health, USPHS , Navy, U S
SURGERY See also under specific diseases, organs and operations as Abdomen Cesarean Section, Peptic Ulcer, Tonsillectomy
  Academy of France elect foreign members 1234
  American Board of See American Board
  A M A requested to publish periodical on, [Fishbein] ★762 ★763 ★844, ★848
  American Surgical Association resolutions on nursing problems, 1156—E, [Naffziger & others] 1168—C
  Amputation See Amputation
  Anesthesia See Anesthesia
  Annals of Western Medicine and Surgery, new journal 1227
  Argentinean Congress of (17th), 343
  blood loss in operations [Baronofsky] 1036—ab
  Early Rising after Operation· See Convalescence
  fibrinolysis with [Macfarlane] 805—ab
  Infections in See Infection, surgical
  International Society of London, 639, 961
  Neurosurgery See Neurosurgery
  Operation (illegal) See Abortion, criminal
  Orthopedic See Orthopedics
  Philippine Journal of Surgery new journal, 1231
  postoperative abdominal adhesions, [Green] 723—ab
  postoperative biliary dyskinesia, [Colp] 890—ab
  Postoperative Infection See Infection, surgical
  postoperative thrombophlebitis and phlebothrombosis [Meigs] 1035—ab
  postoperative vomiting and sedatives, 810
  progress drawbacks, ether and humbug, [Graham] ★98
  refrigeration and preservation of tissue, [Crossman & Allen] ★377 [Pernworth] 1308—ab
  Surgical Association of Piedmont 495
  Suture See Suture
SURGICAL Dressings See Dressings
  Gloves See Rubber gloves
  Gut See Catgut
SURMAN Lectureship See Lectures
SURPLUS Products See Medical Supplies, surplus
SUTURE cotton [Derbyshire] 1313—ab
  cotton vs chromic catgut [Stevens] 891—ab
  surgical surplus sale of 114
  tendon in finger amputations, 358
SWALLOWING See Plummer-Vinson syndrome
SWANSON CLIFFORD A Surgeon General lauds Navy hospital corpsmen, 699—OS
SWEAT congenital familial anhidrosis and neurolabyrinthitis [Helweg-Larsen] 354—ab 895—ab
  hemilateral sweating what causes? 1254
  hyperhidrosis of face 507
  hyperhidrosis (unilateral frontal) supraorbital nerve section for, [Tarlov & Herz] ★476
SWEDISH help fight venereal disease in Poland, 1030
  Medical Board requests control of venereal disease, 712
  Red Cross See Red Cross
SWINDLERS See Impostors
SWINE Erysipelas See Erysipeloid
SWITZER, MARY E awarded Certificate of Merit 48
  physician veterans difficulty in finding hospital staff appointments, 45
SWITZERLAND Belgian gift of radium to, 118
  nutrition during the war [Fleisch] 354—ab
SYMPATHECTOMY, dorsolumbar, gastric ulcer aggravated by, [Blegen & Kintner] ★1207
  for peripheral vascular sclerosis, [de Takats & Evoy] ★441
  lumbar in endarteritis obliterans [Van Ouwerkerk] 652—ab
SYNCOPE 811
  Carotid Sinus See Carotid Sinus
  diagnostic problem, [Brian] 351—ab
SYPHILIS· See also Chancre, Venereal Disease, and under specific organ or disease affected
  ast feeding by syphilitic mother, 810
SYPHILIS—Continued
  Cerebrospinal See Neurosyphilis
  congenital, penicillin for, [Platou] 886—ab
  Diagnosis See Syphilis, serodiagnosis
  early, nephropathies in, [Thomas] 888—ab
  incidence, effect of circumcision, [Wilson] 1243—ab
  incidence higher among teen age groups, Mich , 792
  mortality from, decline, 709
  Neurosyphilis· See Neurosyphilis
  of uterus cervix, [Guerriero & others] ★834
  serodiagnosis, false positive tests after tropical diseases, 73
  serodiagnosis false positive reactions in spinal fluid, 578
  serodiagnosis, false positive tests in malaria, [Rein & Kent] ★1001
  serodiagnosis incidence of positive tests in private practice, 507
  serodiagnosis Kahn test in healthy men, [Wolman] 128—ab
  serodiagnosis, laboratory speeds up blood testing, N Y C , 414
  serodiagnosis premarital blood test regulations amended, Calif , 189
  serodiagnosis, time of positive test before onset of chancre, 1174
  treatment, arsenical intensive, agranulocytosis after, [Fisher] 1305—ab
  treatment of early congenital type with penicillin, [Platou & others] ★10
  treatment, penicillin, acquired resistance of Treponema pallidum, 1282—E
  treatment, penicillin in 1400 soldiers, [Sternberg & Leifer] ★1
  treatment, penicillin, Denmark, 961
  treatment, penicillin, of recently acquired syphilis, infectious relapse after, 212
  treatment, penicillin, problems arising in, [Hill] 1244—ab
SYRINGOBULBIA, surgical treatment, [Cramer] 133—ab
SYRINGOPONTIA, treatment, surgical, [Cramer] 133—ab
SYRUP, cough, [Boyd] 716—C

SOCIETIES AND OTHER ORGANIZATIONS

Acad —Academy
Am —American
A —Association
Coll —College
Commn —Commission
Comm —Committee
Conf —Conference
Cong —Congress
Dist —District
Div —Division
Found —Foundation
Hosp —Hospital
Indust —Industrial
Inst —Institute
Internat —International
M —Medical
Med —Medicine
Nat —National
Pharm —Pharmaceutical
Phys —Physicians
Soc —Society
Surg —Surgery
Surgs —Surgeons
S —Surgical

Acad of Med (Niagara Falls N Y), 49
  of Medicine of Northern New Jersey, 189
Adams County (Ill) M Soc , 489
  County (Ill) Public Health Department, 1227
Advisory Council of Presidents and Secretaries of the M Socs of the Eighth Judicial Dist (N Y), 414
Agricultural Workers Health and M A 706
Alabama A of Obstetricians and Gynecologists, 791
  M A of the State of, 954
Alameda County (Cal) M Soc , 1022
Alaska Native Service, 336
  Territorial Department of Health of, 336
Albany, M Soc of the County of (N Y), 413
Alcoholics Anonymous 334, 876
Alpha Epsilon Delta, 258
  Kappa Kappa, 791, 1227
Am Acad of Allergy, 117
  Acad of Dermatology and Syphilology, 191
  Acad of Orthopaedic Surg , 192
  Acad of Pediatrics 791, 878, 1025
  Anti-Arthritis A 1230
  A for the Advancement of Science, 191, 416
  A for Practical Nurses Education, 794
  A for the Study of Goiter, 794
  A of Indust Dentists, 1165
  A of Indust Nurses 1165
  A of M Record Librarians, 639
  A of Obstetricians, Gynecologists and Abdominal Surgs , 192
  A of Psychiatric Clinics for Children, 878
  Board of Obstetrics and Gynecology, 956
  Board of Ophthalmology, 257
  Board of Otolaryngology, 708
  Board of Pathology, 1165 1295
  Board of Psychiatry and Neurology, 191
  Board of Surg , 337
  Book Center for War Devastated Libraries, 878
  Bureau for M Aid to China, 709
  Cancer Soc , 49, 115, 255, 335, 412, 415, 492, 562, 639, 706, 955, 1024 1025, 1165, 1292
  Chemical Soc , 414, 794, 878
  Coll of Allergists, 878, 1294, 1295
  Coll of Chest Phys , 563, 708, 1025
  Coll of Phys , 492, 957
  Coll of Radiology, 337
  Coll of Surgs , 192, 337, 638, 708
Societies and Other Organizations—Continued
Am —*Continued*
  Conf of Governmental Indust Hygienists, 1165
  Diabetes A , 1293
  Found for High Blood Pressure, 117
  Found for Tropical Med , 192
  Heart A., 49, 563, 639
  Hosp A , 51
  Industrial Hygiene A , 1165
  Inst of Nutrition, 51, 794
  Laryngological A , 708
  Laryngological, Rhinological and Otological Soc , 708
  M A , 191, 563, 707, 709, 877, 1228, 1295
  Neurological Soc , 878
  Nurses A , 191
  Occupational Therapy A , 257, 709
  Orthopsychiatric A , 415
  Orthoptic Council, 794
  Otological Soc , Inc , 708
  Pharmaceutical A , 52, 708
  Pharmaceutical Manufacturers' A , 52, 337
  Psychiatric A , 117, 561, 878
  Phys Literary Guild 257, 1165
  Public Health A., 51, 639, 877
  Red Cross, 51, 412, 415, 492, 638, 639, 707
  Red Cross Nursing Service, 191
  Soc for Research in Psychosomatic Problems, 1165
  Soc for the Study of Arteriosclerosis, 1025
  Soc for the Study of Sterility, 191
  Soc of Electroencephalography, 117
  Soc of Parasitologists, 117
  Soc of Tropical Med , 117
  S A , 337
  Urological A , 638
  Women's A , 256
Arkansas M Soc , 1022
A for Research in Nervous and Mental Disease, 117
  for the Advancement of Research in Multiple Sclerosis 878
  for the Study of Internal Secretions, 258
  of Am M Colls , 51, 492
  of Am Railroads, 1295
  of Indust Phys and Surgs , 1165
  of Internes and M Students 337
  of Philadelphia Scientists 563
Billings, Frank, Found , 189, 561
Boston University School of Med , Alumni A of the, 1163
Brazilian Soc of Cardiology, 258
British M A , 706
Brooklyn, Acad of Med. of, 335
  Cancer Comm , 256
  Cancer Inst , 256
Brush Found , 706
California Board of M. Examiners, 1291
  Cancer Comm , 49
  League of Women Voters, 1291
  M A , 412, 1227
  Soc of Internal Med , 636
  State Department of Education, 791
  State Department of Health, 791
  State Department of Mental Hygiene, 334
  State Personnel Board, 954
Canadian Physiological Soc 794
Catholic Charities of the Diocese of Brooklyn, 707
Central A of Obstetrics and Gynecologists, 191, 563
  M Soc (Pa), 954
  New York Eye Ear, Nose and Throat Soc , 1295
  Pennsylvania Allergy A , 707
  Pennsylvania Indust Health Conf , 956
  Soc for Clinical Research, 336
  West Virginia M Soc , 51
Chamber of Commerce of the U S , 51
Charleston County (S C) Tuberculosis A , 793
Chicago and Cook County, Tuberculosis Inst of, 255 489 1023, 1163
  Bar A , 334 636
  Dermatological Soc , 1227
  Health Department, 255
  Heart A 1023
  Inst for Psychoanalysis 1023
  Inst of Med of, 115, 189, 191, 334, 636, 637, 1292
  M Soc , 115, 334, 412, 489, 637, 954, 1163
  Ophthalmological Soc , 115
  Public Health Inst of, 334, 1292
  Soc of Internal Med 49
  Tuberculosis Soc , 255, 1023
Children's Bureau, 561
Chinese Community Club (N Y C), 876
Cinchona Products Inst , 257
Cincinnati, Acad of Med of, 50, 491, 637
Civilian Production Administration, 1024
Clark County (Wash) Dist Health Department, 793
Cleveland, City of, Division of Health, 1024
  Diabetes Soc , 336
  Found , 336
  Health Museum, 1024
  Radiological Soc , 415
Clinical Soc of the Beth El Hosp , 256
Colorado Civil Service Commn , 412
  State Board of Health, 412
  State M Soc , 489
Columbia County (N Y) M Soc , 116
Community Service Soc (N Y C), 876

Societies and Other Organizations—Continued
Connecticut Board of M Examiners, 331
  Cancer Soc, 1227
  Department of Aviation, 255
  M Examining Board, 255
  Rehabilitation A, 1227
  Selective Service System, 255
  State Department of Health 116
  State M Soc, 255 412 636 706, 1022, 1291
Cook County (Ill) Commn 334
  County Department of Public Health, 1163
Coordinating Council of the Five County M Socs of Greater New York, 955
Cox, George S, M Research Inst, 50
Dallas County (Tex) M Soc, 1229
  Southern Clinical Soc, 491
Dauphin and Perry Counties (Pa), Tuberculosis and Health Soc of, 956
  County (Pa) M Soc, 956
Davidson County (Tenn) M Soc 190
Delta Gamma Fraternity of Coll Women, 794
Detroit Dermatological Soc, 413
  Otolaryngological Soc, 413
  Pediatric Soc, 413
  Physiological Soc, 490
Diplomates A of Berks County (Pa) Phys, 877
Eastern A of Electroencephalographers, 52, 117, 337
  Colorado M Soc, 115
  Kentucky M A 954
Empire Rheumatism Council, 52
Erie County (Pa) Health and Tuberculosis A 116
Evanston (Ill) Board of Health, 561
Excerpta Medica, Inc, 416
Eye Bank for Sight Restoration, Inc, 492
Fairfield County (Conn) M A, 954
Federal Bureau of Investigation 416
  Food and Drug Administration 708
Federation of State M Boards 956
Florida Basic Science Board, 1022
  Board of M Examiners of, 1022
  M A 1022
  Neurology and Psychiatry Soc, 1022
  Public Health A 489
  State Board of Health 561
  State Tuberculosis Board 791
Food and Agriculture Organization, 956 1231
French Soc of School Hygiene 52, 118
Fulton County (Ga) M A, 794 1227
General Practice of Med Soc, 1022
Genessee County (Mich) M Soc, 413, 562
Georgia, M A of 1227
  Warm Springs Found 1163
Gorgas Memorial Inst, 192
Gould Robert Research Found of Erlanger (Ky), 708
Greenville County (S C) M Soc, 190
Hadassah Women's Zionist Organization of America, 416
Hawaii Territorial M. A, 1294
Heberden Soc 52
Heed Ophthalmology Found 1230
Hektoen Inst for M Research 954
Hematology Research Found, 412
Hennepin County (Minn) M Soc, 49, 1163
Hillsborough County (Fla) Health Department, 489
Hodgkin's Disease Research Found, 708
Houghton Baraga Keweenew County (Mich) M Soc 490
House Officers' A of Boston City Hosp, 256, 413, 706
Hudson County (N J) M Soc, 876
Humbolt Rotary Club 792
Illinois Civil Service Commn 255
  Department of Public Health, 115, 255, 334, 791 954 1163
  Public Health A, 1163
  Soc for Mental Hygiene 561 791
  State Dental Department 561
  State M Soc, 706 1023 1292
  Statewide Health Comm, 334
  University of Alumni A 1291
Indian Radiological A, 416
Indiana State Board of Health, 875
  State M A 412, 489, 1023
Indianapolis (Ind) M Soc 115
  Obstetrical and Gynecological Soc 1023
Ingham County (Mich) M Soc, 256
Inst of Experimental Biology, 189
  of Rehabilitation and Med, 50, 256
  of Pacific Relations 1291
Instituto Nacional de Nutricion, 118
  Pasteur (Lisbon) 258
Internat Acad of Legal and Social Med, 564
  and Spanish Speaking A of Phys, 639
  and Spanish Speaking A of Phys, Dentists and Pharmacists 1230
  A of Allergists 561
  Children's Emergency Fund, 956, 1231
  Coll of Surgs 1025
  Cong of Military Med, 1231
  Cong of Obstetrics and Gynecology, 416
  Labor Organization 956, 1231
  League Against Epilepsy, 117
  Red Cross, 1231
  Refugee Organization, 956, 1231
  Soc of Surg, 639
Interstate Postgraduate M A, 1025
Iowa Comm for the Study of Venereal Diseases 954
  State Department of Health, 951
Iowa—*Continued*
  State Fly Control Conf, 951
  State M Soc, 876
Irish Ophthalmological Soc, 1228
Isthmian Canal Zone, M A of the 117
Italo-Am Center for M Science, 1231
Jefferson County (N Y) M Soc, 190
Jewish Board of Guardians, 637
  Consumptives Relief Soc 115
Joint Comm for Research in Problems of Cerebral Palsy 1164
Kalamazoo (Mich) Acad of Med, 792
Kansas Local Health Officers' Conf, 489
  M Soc, 792 1292
  State Board of Health, 561, 792, 1292
Kappa Sigma Fraternity, 50
Kellogg Found, 1163
Kentucky State M A, 189
Kings M Soc of the County of (N Y), 335
Lake County (Ind) M Soc, 115
  County (Ind) Tuberculosis A, 115
Lehigh County (Pa) M Soc, 956
Levy, Joseph and Helen Yeamans Found, 490
Liberian Inst, 192
Litchfield County (Conn) M A, 255
Los Angeles County M A, 561, 1227
Louisiana-Mississippi Ophthalmological and Otolaryngological Soc, 1293
Mahoning (Ohio) M Soc, 1229
Maine Board of Registration of Med 1293
Maryland, M and Chirurgical Faculty of the State of, 1025, 1163
Massachusetts Department of Public Health, 1228
  M Soc 1023, 1293
  Medico-Legal Soc 256
  Phys Art A 1023
  State Department of Public Health, 489
Mayo Found for Med, Education and Research, 337
Maywood (Ill) Community Planning Council, 1163
Maywood Melrose Park (Ill) Health Center Comm, 1163
M and S Relief Comm of America, 1025
  Library A, 1165
Menninger Found 792
Mexican Soc of Tropical Med, 118
Michigan A of Industrial Phys and Surgs, 706
  Department of Health 335
  Postgraduate Clinical Conf, 413
  State M Soc, 335, 490
Middle Tennessee M A, 190
Middlesex County M Soc, 1023
Milwaukee County (Wis), M Soc of 956
Minnesota Department of Health, 562
  Public Health A, 490
  State Board of M Examiners 490 562
Mississippi State Board of Health, 956
  State M Education Board 335
  Valley M Soc, 191
Missouri State M A 876
Monroe M Soc of the County of (N Y), 414
Multnomah County (Ohio) M Soc, 1229
Nashville Acad of Med 190
Nat Acad of Sciences 52
  Advisory Council 876
  Advisory Health Council, 791
  Advisory Mental Health Council 792, 1023
  A for the Prevention of Tuberculosis (G Br) 709
  A of Boards of Pharmacy 708
  Better Business Bureau, 191
  Brucellosis Commn, 118
  Cancer Found 955
  Cancer Inst 793 1024
  Cancer Inst (Canada) 1231
  Comm for Mental Hygiene, 117, 415, 876 878
  Conf of Social Work 639
  Conf on Health in Colls 563
  Conf on M Service 337
  Council of Jewish Women 637
  Council of Scientific Investigations of Spain, 637
  Council on Rehabilitation 708
  Found for Infantile Paralysis 117 256, 257, 415 490 492 639, 709 792, 1024
  Health Council 639
  Health Service (G Br), 709
  Inst of Allergic Diseases (Argentina), 564
  Inst of Health 791, 1024
  Malaria Soc 191
  Mental Health Found., 1230
  Organization of Public Health Nursing, 191 639
  Research Council 118 256 492
  Safety Council 564, 639, 1294
  Soc for Crippled Children and Adults, 878
  Soc for the Prevention of Blindness, 258, 562 794
  Soc of M Research 51
  Tuberculosis, A 190, 564, 639, 956
Nebraska State M A, 256 490, 1228
New England Diabetes A, 1025
  Soc of Physical Med 49, 639
  State M Socs, Council of, 1230
  S Soc 337
New Jersey Diabetes A, 1293
  Induction Examining Board, 335
  M Soc of 1023
  Mosquito Extermination A, 1293
  Orthopedic Soc, 190
New Jersey—*Continued*
  Rehabilitation Commn, 1164
  Soc of Surgs of, 49
New Mexico M Soc, 1024
New York Acad of Med, 116, 190, 414, 415, 793, 876, 1024
  City Cancer Comm, 335, 491
  City Health Department 256, 637, 877, 1164
  Diabetes A, 49, 117, 876
  Found, 256
  Health Council of Greater, 707
  Inst of Clinical Oral Pathology, 190
  Lions Club, 50, 637
  M Soc of the State of 50, 256, 335, 413, 637, 793
  Psychiatric Inst, 414
  Rheumatism A, 1228
  Soc of Neurosurgeons, 116
  State Department of Civil Service, 562
  State Health Department, 50, 116, 192, 255, 256, 335
  State Joint Legislative Comm on Cerebral Palsy, 335
  State Nurses A, 490, 562
  State Public Health Council 955
  Tuberculosis and Health A, 707, 955
  Tuberculosis Sanatorium Conf. of Metropolitan, 1024
Northern M A, 257
  Tri State M A, 708
Northwestern University Alumni A, 637
Office of Indian Affairs, 336
Ogden S Soc, 1024
Ohio Department of Health, 491, 563
  State M A, 1293
Oklahoma Hosp A, 414
  M Research Found, 414
Ortho Research Found, 708
Oxford, Inst of Social Med of, 190
Pacific Coast S A, 337
Pan Am A of Philadelphia 257
  Cong of Ophthalmology, 492
  Cong on Tuberculosis 563
  Rheumatism League 52
  Sanitary Bureau, 639
  Sanitary Conf, 639, 1230
  Sanitary Education Conf, 1230
Passaic County (N J) M Soc, 876
Pasteur, Louis, Inst 192
Pediatric Found, 335
Pennsylvania Acad of Ophthalmology and Otolaryngology, 1229
  Department of Health 50, 336, 956
  M Service A of 257
  M Soc of the State of, 257, 956
  Psychiatric Soc, 50
  Tuberculosis Soc, 877, 956
Perry County (Ill) M Soc, 115
Phi Beta Pi Fraternity, 877, 956
  Chi M Fraternity, 956
  Lambda Kappa, 708
Philadelphia County (Pa) M Soc, 707, 1024, 1164 877
  Roentgen Ray Soc, 50
  Tuberculosis and Health A 877
Phillipine Coll of Surgs, 1231
Phipps Henry, Inst for the Study, Treatment and Prevention of Tuberculosis, 877
Planned Parenthood Federation of America, 337
Plotz Ella Sachs Found, 416
Presbyterian Hosp A of Orange County (Cal.), 636
Provisional Internat Civil Aviation Organization 956 1231
Psychiatric Found, 878
Public Health Cancer A of America, 192
Puerto Rico A of Social Workers of, 1230
  Department of Health of, 51, 336 638, 1230
  M A of, 51, 638
  Pharmaceutical A, 708
  Planning Board of, 336
  Public Health A, 708
Queens County (N Y) Cancer Comm 562
Quincy (Ill) Public Health District 1227
Ramsey County (Minn) M Soc 1163
Reading (Pa) Eye Ear Nose and Throat Soc, 414 877
Red Cross see Am or Internat Red Cross
  Internat Comm of the, 878
Rensselaer, M Soc of the County of (N Y), 256
Research Council on Problems of Alcohol, 334, 335
Research Study Club 189
Rhode Island M Soc, 1294
Richland County (S C) Tuberculosis A, 1229
Richmond County (N Y) M Soc, 50
Riggs Austen, Found, 792
Rochester (N Y) Acad of Med, 414
  Board of Education of, 414
  and Monroe County (N Y), Tuberculosis and Health A of, 414
Rockefeller Found, 117, 337, 489, 561, 639, 1230, 1294
  Inst for M Research 878
Rocky Mountain M Conf, 1024
Rosenstock Memorial Found Inc 955
Royal Coll of Phys (Edinburgh, Scotland), 258
  Soc of Arts, 878
St Louis County (Mo) M Soc, 707, 1163
San Diego County (Cal) M Soc, 331
Santa Clara County (Cal) Health Department, 706

Societies and Other Organizations—Continued
Saranac Lake (N. Y) M Soc., 1228
Schiff, Mortimer and Adele, Found , 1024
Seaboard M Soc , 51
Sealy and Smith Found of Galveston (Tex.), 1164
Seattle (Wash) Neurological Soc., 1025
Seeing Eye, 191
Sloan-Kettering Inst. for Cancer Research, 335, 414
Sociedad Argentina de Pediatria, 957
  Nacional de Cirugia of Cuba, 957
  Ycateca de Ol[illegible] 118
Soc for Clinic[illegible]
  for Vascular [illegible]
  of Am M Cons , [illegible]
  of Bacteriologists, 414
  of General Phys , 491
  of Illinois Bacteriologists, 189
  of M Inspectors, 52, 118
  of Physical Med , 1295
  of University Surgs , 639
South Am Cong of Neurosurgery, 258
South Carolina M. A , 1229
  Tuberculosis A , 190
Southeastern S. Cong , 708
Southern California Soc for Mental Hygiene, 334
  M A , 117, 1230
  Soc for Clinical Research, 878
  S A , 191, 337
Southwest Allergy Forum, 563
Southwestern M Found , 415 793
Spokane County (Wash) M Soc , 491
Squibb Inst for M Research, 192
State Charities Aid A , 794
Sugar Research Found , 52
Sullivan County (Ind) M Soc , 1228
Summit M Soc , 257
Sunset Camp Service League, 636
Telfair Wheeler Dist (Pa) Health Department, 954
Tennessee State M A , 1229
Texas Hosp Service, 491
  M Center, 297
  Soc of Pathologists, 638
  State Board of Health, 638
  State M A of, 1164, 1229
Tompkins County (N Y) M Soc , 413
Triological Soc , 708
Tri-State M A , 1294
Trudeau Soc of Los Angeles, 561
Tumour Clinic A of the State of New York, 256
UNESCO, 956, 1231
United Nations, 957, 1231
  Educational, Scientific and Cultural Organization, see UNESCO
  Social Affairs Department, 956
  Relief and Rehabilitation Administration, see UNRRA
U S A of State and Territorial Health Officers, 1293
U S Bureau of Animal Industry, 875
  Federal Security Agency, 1230
  Public Health Service, 49, 116, 189, 192, 255, 331, 415, 416, 489, 490, 491, 561, 708, 875, 954, 1024, 1025 1164, 1229, 1292, 1294
  Weather Bureau, 334
UNRRA, 258, 638, 956, 957, 1231
Vermont State M Soc , 638
Veterans Administration, 51, 190, 414, 415, 562, 956, 1292
Virginia, State Department of Health of, 116
Wainwright Tumor Clinic A , 956
War Assets Administration 255
Washington State M A , 707
  State Restaurant A , 793
Wayne County (Mich) M Soc , 792
Western New York Hosp Council, 490
  Soc for Clinical Research, 336
  State Psychiatric Inst and Clinic, 337, 1024
  S A , 337
West Virginia Cancer Soc , Inc , 415
  State M. A , 237, 415, 491, 1294
Winnebago County (Ill) M Soc , 636
Wisconsin Department of Veteran Affairs, 956
  State M Soc , 877, 956
  S Soc , 51
Women's M A , 51
World Health Organization, 117, 258, 956, 1231
  M Organization, 878

T

TABES DORSALIS, probable gastrointestinal lesion, 278
[illegible] ing and Eating Utensils
[illegible] mal, acetylcholine for, [illegible] [Jervell] 504—ab
TAFT, ROBERT, asks billion dollar budget for social welfare, 947—OS
  planning for health by, 180—E
TAF[illegible]) U S Department [illegible] d Security, 180—E; [illegible] —OS; (Joint Com- [illegible] (A. M. A. position [illegible] f hearings on) 1159 —OS
  Smith-Ball-Donnell National Health Bill, 36, 479—E; 556—OS, 855—E, 868—OS, 943 —OS
TALC granuloma, [Lichtman] 206—ab
  infected, tetanus from, fatal to 3 infants, Australia, 1031
TALKING: See Speakers; Speech; Voice
TANTALUM in tendon reconstruction, [Pearlman] 206—ab
TAPE: See Adhesive
TARTAR, Cream of: See Potassium bitartrate
TASTE and food selection in hypoglycemia, [Mayer-Gross] 573—ab
TATTOOING, cornea, use of platinum or gold chloride plus epinephrine, [Knapp] 358
TAVERNS, sanitation, lack, Chicago, 255
TAX: See also Medicolegal Abstracts at end of letter M
  income, and state associations, [various authors] 551—ab; [McDavitt & others] 627 —ab
  income, physician's, 401—E, 402—OS
TEACHERS: See also Professors
  [illegible] -E
[illegible] Medical
[illegible] Occupational Therapy, Physical Therapy
  electroencephalography, needed by Veterans Administration, 113
  medical, fatal poliomyelitis virus infection, [Wenner] 1303—ab
  medical, giving anesthetics and doing x-ray work, 1920, [Fishbein] ★923
  medical, granted degree, Tenn , 877
  medical, in hospitals, statistics, ★1077; 1158 —E
  medical, schools for approved by A. M. A., ★1150
  Russian, training 1,980,000 in 5 years, 788 —OS
TEETH See also Dentistry; Jaws
  artificial, recurrent buccal vesicles from, 656
  care (free), Eastman Institute provides for children, Stockholm, 712
  caries and food habits, [Neumann] 1037—ab
  caries, experiment in, Norway, 263
  caries-fluorine hypothesis, [Downs] 499—ab
  caries, fluorine in water, safe level, 734
  caries, fluorine research project, Evanston, 561
  caries, topical sodium fluoride in, [Knutson] 573—ab
  enamel, erosion, oxalic acid protects against, 1010—E
  lemon juice dissolves substance of, 1218—E
  surgery intravenous barbiturates for, 812
TELANGIECTASIA, hereditary hemorrhagic (Rendu-Osler-Weber Disease), rutin for, 247—E
  treatment, rutin and sulfonamides incompatible, [Nushlan] 716—C
TELEVISION programs by A M A , 326—OS
TEMPERATURE. See Cold, Heat; Tropics; Weather
TEMPERATURE, BODY: See also Fever
  as guide to determine time of death, 195
TEMPLETON'S Raz-Mah Capsules, 568—BI
TENDONS reconstruction, tantalum, [Pearlman] 206—ab
  sutures in finger amputations, 358
  transplantation in hand, [May] 206—ab
TENSION See Surface Tension
  Nervous. See Mental Tension
TERATOMA · See Epidermoid
TERMINOLOGY · See also "Words and Phrases" under Medicolegal Abstracts at end of letter M
  A M A and nomenclature, [Fishbein] ★103; ★468
  clinical pathology, 213
  doctors urged to use "plain English," 1015 —OS
  eponyms, [Wolf] 344—C
  health center defined (Reference Committee report), 36
  "normal," what is it? 1011—E
  sectarian practice and physician defined by A. M. A , [Fishbein] ★933
  state medicine defined by A M. A , [Fishbein] ★925; ★928
TESTIMONY, Expert. See Evidence
TESTIS, atrophic, removal, 656
  Hormone · See Androgens
  inflammation, mumps orchitis, [Nixon] 1243 —ab
TESTOSTERONE See Androgens
TEST-Tube Baby: See Impregnation, artificial
TETANUS a preventable disease, [Glenn] 720 —ab
  from infected talc, 3 babies die, Australia, 1031
  serum (high titer), production, [Buer] 1317 —ab
  treatment, bebeerine dimethylether methochloride, curare substitute, 882
  treatment, penicillin, [Lewis] 1171—ab
TETANY after mercurial diuresis, [Marshall] ★1007
TETRACHLORETHYLENE treatment of fasciolopsis infection, 900
TETRAETHYLAMMONIUM Ion · See Ethylammonium Ion
TETRATHIONATE in thromboangiitis obliterans, possible dangers, (Council report) 693
TEXAS, Q fever in, [Topping & others] ★813; [Irons & Hooper] ★815, [Irons & others] ★819; [Cox & others] ★820
  University of: See University
THEOCIN. See Theophylline
THEOPHYLLINE (theocin) N.N.R , (Miller), 321
THEOPHYLLINE [illegible] aminophylline), [illegible] 179; (Barlow-Ma[illegible]
  treatment of acute coronary occlusion, 357
THERAPEUTICS: See also Blood Transfusion; Diathermy; Drugs; Fever, therapeutic; Occupational Therapy; Physical Therapy; Roentgen Therapy; etc. under names of specific substances
  A. M. A. Therapeutic Trials Committee, cost of clinical research, ★30
  Bed Rest in Treatment vs Early Rising: See Convalescence
  Self-Medication See Self-Medication
THERMOTHERAPY: See Diathermy; Heat, Therapeutic use
THIAMINE HYDROCHLORIDE: See also Vitamin B_1
  assay in Haskell's Pantabce, [Haskell] 645—C
  deficiency and diet high in carbohydrate, [Ring] 1304—ab
  labor accelerated with, Russia, 122
  N.N R., (Harrower; Vale) 619; (Miller) 1009
  treatment of myasthenia gravis, 1252
THIOMALATE, lithium antimony, treatment, [Brown] 268—ab; [Rose] 269—ab
THIOSULFATE: See Sodium thiosulfate
THIOURACIL, methyl, in thyrotoxicosis, 544 —E; [Frisk] 574—ab; [Poate] 1172—ab
  N N R , (description) 619; (Abbott, Parke Davis; Rorer; Squibb; Winthrop) 619
  propyl, in hyperthyroidism, [Astwood] 500 —ab
  propyl, in thyrotoxicosis, [Reveno] ★1190
  toxicity, complications, [Beierwaltes] 570—ab
  treatment of angina pectoris, disadvantages, [DiPalma] 127—ab
  treatment of congestive heart failure with 2-thiouracil, [Sharpey-Schafer] 805—ab
  treatment of hyperthyroidism, [Bartels] 893 —ab; [Hadorn] 967—ab
  treatment of hyperthyroidism in pregnancy, 73
  treatment of hyperthyroidism with derivatives, 544—E
  treatment of ulcerative colitis, [Martin] 1037—ab
THORACOPLASTY, revision, [Hochberg] 804 —ab
THORAX: See also Chylothorax; Pneumothorax; Ribs
  Chest X-Ray See Tuberculosis, case finding
  injury (battle), traumatic chylothorax resulting from, [Berry] ★319
  injury, pneumonia after, [Phillips] ★161
  intrathoracic meningocele, [Cabello Campos] 730—ab
  stereoroentgenograms in esophageal leiomyoma, [Schafer & Kittle] ★1202
  surgery of chest, rehabilitation after, 1029
  Transthoracic Vagotomy: See Nerves
  tumor, superior sulcus pulmonary (Pancoast syndrome), [Wichtl] 354—ab; [Walker] 890—ab
THORNTON, EDWARD, death, 492
THRESHER'S disease, [Hoffmann] 652—ab
  lung, [Tornell] 504—ab
THROAT: See also Larynx; Nasopharynx; Neck; Otolaryngology; Tonsils
  infections (acute), penicillin for, [Faucett] 572—ab
  Sore: See also Tonsils, infected
  sore, neurologic disease after, [Bronson] 500—ab
  sore, of unknown cause, [Commission on Acute Respiratory Diseases] ★588
  Sore (Quinsy). See Abscess, peritonsillar
  streptococci (hemolytic), 322—E
THROMBASTHENIA, hereditary hemorrhagic, pseudohemophilia, [Perkins] 349—ab
THROMBECTOMY for venous thrombosis and pulmonary embolism, [Allen & others] ★1268
THROMBIN: See also Blood coagulation; Blood prothrombin
  in suprapubic prostatectomy [Quinby] 203 —ab
THROMBOANGIITIS OBLITERANS, coffee not contraindicated in, 73
  treatment, inject 1 (—) histidine monohydrochloride-sodium ascorbate, [Wirtschafter & Widmann] ★604
  treatment, tetrathionate, possible dangers (Council report) 693
THROMBOCYTOPENIA. See Purpura, thrombopenic
THROMBOPHLEBITIS: See also Phlebothrombosis, Pylethrombophlebitis
  in gynecologic patients, [Meigs] 1035—ab
  trauma and, 280
  treatment, [Aycock & Hendrick] ★1262
  treatment, [Allen & others] ★1268
THROMBOSIS: See also Embolism, Phlebothrombosis
  carotid (internal) primary, [Miletti] 430—ab
  cerebellar, chiropractor induce, [Pratt-Thomas & Berger] ★600
  cerebral (recurrent), as nosologic entity, 940 —E
  coronary, and anticoagulants, 970
  coronary, changes in blood coagulation after, [Ogura] 137—ab
  coronary, effects of cholagogues on, 146
  venous, problem, [Aycock & Hendrick] ★1258

  - menstruum for,
  - venous treatment, [Allen & others] *1268
- THYMECTOMY See Thymus excision
- THYMOL turbidity test of liver function, [Mateer & others] *911, (in liver cirrhosis) [Labby & others] *1185
- THYMUS excision in myasthenia gravis, 1252
  - hypertrophy, 644
  - status thymicolymphaticus, 644
- THYROID See also Goiter, Goiter, Toxic
  - cancer, [Cattell] 273—ab
  - extract, administration, 578
  - extract, diabetes after prolonged use, 195
  - extract growth promoting agents, 898
  - extract, treatment of obesity [Freed] *372
  - Hyperthyroidism See Hyperthyroidism
  - Hypothroidism See Hypothyroidism
  - lability of bone, mobilization of minerals and salts from skeleton, 110—E
  - tumor, struma ovarii, [Smith] 722—ab
- THYROTOXICOSIS See Goiter, Toxic
- TIC See Spasm
- TICKS, Fever from See Rocky Mountain Spotted Fever
- TIDAL Drainage, Irrigation See Bladder
- TIMM, O K, personal, 1020
- TINEA capitis (ringworm of scalp), [Steves & Lynch] *306
- TINNITUS aurium, with mild perceptive deafness, 436
- TIRE See Rubber Tire
- TISSUES See also Skin, under names of specific organs
  - Cells See Cells
  - Deproteinated Extract See Pancreas
  - effect of brown fat extracts on metabolism, 436
  - extracts (animal) effects on wound healing, [Hoffman] 720—ab
  - preservation, and surgical refrigeration, [Crossman & Allen] *377, [Pernworth] 1308—ab
  - reactions induced by fibrinogen plastics, [Bailey] 721—ab
  - reactions to cold [Friedman] 200—ab
  - therapy of retinitis pigmentosa, [Lipkina] 652—ab
- TNT See *tri*Nitrotoluene
- TOBACCO habit and cigarets minor immoralities of 1899, [Fishbein] *474
- TOES, hallux valgus, Fairyfoot for 568—BI
  - recurrent erysipelas like eruption between, 655
- *TOLUENE See triNitrotoluene*
- TONGUE changes in British troops, [Smith] 68—ab
  - inflammation pellagrous glossitis, folic acid for, [Spies] 425—ab
- *TONSILLECTOMY, number of deaths under general anesthesia for, 507*
- TONSILLITIS See Tonsils, infected
- TONSILS, Abscess See Abscess, peritonsillar
  - Excision See *Tonsillectomy*
  - Infected See also Angina, Vincent's
  - infected deaths after Analbis Suppositories 852—E, [Weinstein] 962—C
  - infected, exudative tonsillitis of unknown cause, [Commission on Acute Respiratory Diseases], *588
  - infected, penicillin for follicular tonsillitis, [Hopp] 133—ab
- TOOTH See Teeth
- TORULOSIS of central nervous system, [Hassin] 1309—ab
- TOXIC Goiter See Goiter, Toxic
- TOXICOLOGY See Poisoning
- TOXIN, antidotal property of Penicillin notatum filtrates 33—E
- TOXOPLASMOSIS human 306—ab, 852—E
  - choroiditis, a neutralizing antibody test for, [Johnson] 647—ab
  - in infants and children, probably no recurrence in repeated pregnancies, 970
- TRACHEA See also Laryngotracheobronchitis
  - bronchial drainage, 4 methods, [Foregger] *1200
  - obstruction from congenital vascular ring [Sweet] 1310—ab
  - tuberculosis, treatment, [Secretan] 430—ab
- TRACHOMA treatment, penicillin and sulfonamides [Lavery] 67—ab
- TRADE Hazard Poisoning etc See Industrial Diseases, Industrial Health, etc
  - Unions See Industrial Trade Unions
- TRAFFIC Regulations See Automobiles
- TRAILER Camps See Automobiles
- TRAINS See Railroads
- TRANSFUSION See Ascites, Blood Transfusion
- TRANSPLANTATION See Grafts (cross refer-
  - Tendons, Tumors
  - e Automobiles, Avia
  - s Traveling
  - See Ambulances
  - omy See Nerves
  - ection See Bladder, paralysis
- TRAPPER S Preparation for Sinus 264—BI
- TRAUMA See also Accidents Burns, Fractures Wounds Medicolegal Abstracts at end of letter M, under names of specific organs and diseases as Brain, Head, Legs, Neuroma, Osteoporosis, Paraplegia, Pneumonia
- TRAUMA—Continued
  - Electric See Electric shock
  - fibrinolysis in, [Macfarlane] 805—ab
  - Industrial See Industrial Accidents
  - International Congress for Traumatology, Sept 1948, 1300
  - protect against injury in airplane accidents, [Behnke] *455
  - Shock See Shock, traumatic
  - thrombophlebitis and, 280
- TRAVELING See also Aviation, Railroads, Ships
  - immunizations for Kenya Colony 434
  - inoculation of intending travelers against yellow fever, 643
- TRAXO and Fruitola, 422—BI
- TREATMENT See Therapeutics
- TREMOR, head, cataract surgery in patient with, 278
- TRENCH Mouth See Angina Vincent's
- TREPONEMA Pallidum Infection See Syphilis
  - pallidum penicillin resistance to, acquired, 1282—E
  - Pertenue Infection See Frambesia
- TRICHINOSIS, epidemic, in Boars District, [Ward] 968—ab
  - in Massachusetts [Ober] 965—ab
  - in New York City, [Shookhoff] 720—ab
  - serologic and skin tests in [Roth] 968—ab
- TRICHOMONAS hominis and diarrhea, 145
  - prostatitis, 733
- TRICUSPID VALVE, bacterial endocarditis, [Karotkin] 139—ab
- TRIDIONE See Trimethadione
- TRIETHYLENE glycol for disinfecting purposes, 696—E
- TRIMETHADIONE (tridione), N N R, (description) 320, (Abbott) 320
  - treatment of epilepsy, [Lennox] 130—ab
- TRIMM Vacuum Tube Hearing Aid, 542
- TRINITROPHENOL (picric acid) stain of hair, removing, 734
- TRIODE (motion picture review), 802
- TROOPS See World War II
- TROPICAL DISEASES See also Tropical Medicine, and under names of specific diseases as Malaria, Schistosomiasis, Sprue, Yellow Fever, etc
  - acne, [Novy] 889—ab
  - eosinophilia or pulmonary acariasis, [Hall] 967—ab
  - in veterans [Sapero] 966—ab
  - studies, Ohio 116
  - syphilis reaction (false positive) after, 73
  - treatment melarsen oxide, [Payne] 893—ab
  - Typhus See Tsutsugamushi Disease
  - Ulcer See Leishmaniasis
- TROPICAL MEDICINE See also Tropical Diseases
  - *American Journal of Tropical Medicine*, (Dr Craig resigns as editor) 794
  - Naval School of Tropical Medicine Guam, 331
  - research institute, Liberia, 192
- TROPICS, efficacy of insecticidal sprays in aircraft, [Garnham] 140—ab
  - deterioration from living in 1216—E
- TRUBEK Fellowship See Fellowships
- TRUDEAU festival in Japan, 52
- TRUMAN, HARRY S, health program and social security 180—E 184—OS
  - designates May 1 Child Health Day, 1219—OS
  - President's Reorganization Act 112—OS
  - rests on advice of physician 871—OS
  - scientists thanked for wartime research, 327—OS
  - streptomycin controls continued 482—OS
- TRUNCUS arteriosus in infancy, [Taussig] 1303—ab
- TRUST medical A M A as first organized attack on, [Fishbein] *761
- TRYPANOSOMA cruzi, cancerolytic substance KR 111—E 122 [Klyuvea] 1038—ab
- TSUTSUGAMUSHI DISEASE differentiate from rickettsialpox [Greenberg & others] *904
  - incidence in U S Army, 1942 1945, [Sadusk] *1193
- TUBAL Pregnancy See Pregnancy ectopic
- TUBE See Catheterization Duodenal Tube, Endotracheal Tube Vitallium tube
- TUBERCLE BACILLUS detection by fluorescence technic, [Clegg] 68—ab
  - growth streptomycin retards, [Corper] 207—ab
  - vole injection in tuberculous persons, [Cameron] 429—ab
- TUBERCULIN reactors, [Dash] 63—ab
  - reactors calcifications in spleen in histoplasmin and [High] 804—ab
  - skin reactions to [Civeira] 503—ab
  - Test See Tuberculosis, case finding
- TUBERCULOSIS See also Tuberculosis of Lung, under names of specific diseases and organs
  - board U S Army air base hospitals taken over by, Fla, 791
  - case finding, chest x ray surveys in Dachau concentration camp, [Platt] 65—ab
  - case finding countywide chest x-ray service, Ind 115
  - case finding, "personal equation" in interpreting chest roentgenogram 399—E
  - case finding, roentgen technics compared, [Kornat] 963—C
  - case finding, tuberculin testing [Dash] 63—ab
- TUBERCULOSIS—Continued
  - case finding, x-ray and photofluorographic methods compared, [Birkelo & others] *359; 399—E
  - case register, Pa, 116, 956
  - complications, renal tuberculosis, [Ustvedt] 1318—ab
  - conference, N Y, 707
  - congenital, aspiration type, [Pagel] 141—ab
  - control, Italy, 880
  - control problem symposium Chicago, 1023
  - control program, Chicago, 637
  - control program, expanded, New York, 256
  - control program, Richland County, S C, 1229
  - control project, Maywood-Melrose Park Health Center Committee, 1163
  - diagnosis, sarcoidosis [Cameron] 207—ab
  - *hospitals *1066, *1071*
  - immunization, BCG, conference on, by USPHS, 1158—E
  - immunization, BCG, in hospitals and sanatoriums, [Ferguson] 889—ab
  - immunization, BCG, Norway, 1167, [Hertzberg] 1247—ab
  - immunization, BCG, program N Y, 637
  - immunization, BCG, skin reactions to, [Civeira] 503—ab
  - in captive wild birds, relation to diet, [Ratcliffe] 888—ab
  - in children, Swedish Red Cross home for, 712
  - in medical students, hazard, [Morris] 62—ab
  - *in U S, statistics 698—E*
  - in University students, Porto Alegre, 714
  - incidence in Europe, alarming spread 947—OS
  - incidence, survey in 73 locations, Nebr, 490
  - industrial survey, Chicago, 489
  - infectious granulomatous lesions of cervix, [Guerriero & others] *832
  - influenza vaccine, advisable to use? 1174
  - luposa, vitamin D_2 and calcium for, [Hermans] 504—ab
  - malignant primary, of adults, [Dufourt] 141—ab
  - National Association for Prevention of, Great Britain, 709
  - National Tuberculosis Association director of research Dr Esmond Long 564
  - Pan American Congress on, 563
  - patients, inject vole tubercle bacilli in, [Cameron] 429—ab
  - patients station of reeducation and apprenticeship of, 263
  - primary and adult, relationship between, [Ustvedt] 67—ab
  - psychology of patient [Day] 428—ab
  - treatment, streptomycin, [Hinshaw] 269—ab, 1234
  - Trudeau festival in Japan, 52
  - Vaccination See Tuberculosis immunization
- TUBERCULOSIS OF LUNG (pulmonary tuberculosis) See also Bronchus tuberculosis
  - adult apical predilection, Roder s theory, [Roder] 1237—C
  - artificial pneumothorax (extrapleural) in, [Reid] 651—ab
  - Case Finding See Tuberculosis case finding
  - clinical session, N Y, 414
  - complications cardiac lesions, 567
  - hematogenous, and silicosis, [Zollinger] 1038—ab
  - *surgical treatment of tuberculous pleural* empyema [Harbitz] 142—ab
  - *surgical treatment* revision thoracoplasty, [Hochberg] 804—ab
  - surgical treatment lobectomy, pneumonectomy [Sweet] 1310—ab
  - treatment amphetamine sulfate, [Houghton] 805—ab
  - treatment, penicillin intrapleurally, [Callahan] 138—ab
  - treatment, streptomycin [Pfuetze] 648—ab, [Sanford & O'Brien] *691
- TULANE University, (degree in public health) 561, (Dr Matas gift to library) 561
- TULAREMIA, primary pneumonia streptomycin treatment [Smith] 205—ab
- TUMORS See also under names of specific organs and types of tumors
  - amebic, intestinal tumors, [Silverman & Leslie] *994
  - Brodie's, of breast [Aiken] 207—ab
  - Chromaffin Cell See Pheochromocytoma
  - clinic association meeting, Pa 956
  - Malignant See also Cancer, Sarcoma (cross reference)
  - malignant, eosinophilia in, [Isaacson] 1171—ab
  - malignant mechanism of radiation effects Barnard Hospital lecture, [Warren] *462
  - malignant, vagina cell examination for, [Ayre] 205—ab
  - masculinizing (possible), 213
  - neurology, [Wilson & Rupp] *509
  - registry, Holman s gift to establish, 192
  - transplanted, Besredka's theory of immunity developed to, 111 E, [Gross] 800—C
- TURKISH National Medical Congress (9th), 1236
- TWINS retinoblastoma in, [Falls] *171
- TYMPANUM See Ear
- TYPHOID carriers, Mich, 335
  - complications hepatobiliary, in childhood [Sepulveda de Borquez] 1247—ab
  - treatment, Vi antigen, [Fernandez Brito] 1247—ab
  - vaccine given after flood, Ill, 1227

TYPHUS, diagnosis (differential) from rickettsialpox, [Greenberg & others] *904
  epidemics, localized in war prisoners in France, [Lemierre] 651—ab
  in research workers and others, [Sadusk] *1194
  in U S Army following immunization, incidence, severity, etc., [Sadusk] *1192
  louse borne, ear symptoms in, [Merei] 1318—ab
  murine, in rat and man, [Davis] 131—ab
  Scrub or Tropical See Tsutsugamushi Disease
  serodiagnosis, [Sadusk] *1198
  U S of America Typhus Commission Medal. See World War II Heroes
  vaccine (Cox-type), efficacy, [Gilliam] 268—ab

U

UN See United Nations
UNESCO See United Nations
UNRRA. See United Nations Relief and Rehabilitation Administration
U S P See Pharmacopeia
ULCERS See also Abscess Colitis, ulcerative, Peptic Ulcer Suppuration, under organ or region affected as Cornea, Genitals Mouth
  treatment, bacitracin, [Meleney & Johnson] *675
  treatment, 5-nitro-2-furaldehyde semicarbazone, [Downing & others] *299, [Morin] 963—C
  treatment of arteriosclerotic leg 1320
  treatment, powdered human blood cells, [Anderson] 885—ab
  Tropical See Leishmaniasis, cutaneous
  Venereal See Chancre
ULCUS Molle See Chancroid
ULTRAVIOLET RAYS radiation for air disinfecting purposes council discusses, 936
  Sensitivity to See Light
UMBILICAL CORD tetanus fatal to 3 infants from infected talc used on stump 1031
UNCINARIASIS See Ancylostomiasis
UNCONSCIOUSNESS See Anesthesia, Sleep
UNDERGRADUATE Work Students etc See Education Education, Medical Schools, Medical, Students Students, Medical University
UNDERNOURISHED See Starvation
UNDULANT FEVER See Brucellosis
UNIONS See Industrial Trade Unions
UNITED MINE Workers Health Fund (Reference Committee report) 36 [Dickinson] *1285
UNITED NATIONS See also World Health Organization
  Educational Scientific and Cultural Organization Paris conference 342
UNITED NATIONS RELIEF AND REHABILITATION ADMINISTRATION (UNRRA), funds allocated to World Health Organization, 1231
  health division closes 638
UNITED STATES See also American Federal; National
  Army See Army World War II
  Cadet Nurse Corps See World War II nurses
  Civil Service Position See Physicians positions open for
  Congress (80th) what's ahead for? [Miller] 555—ab
  Congress legislation before See Laws and Legislation
  Dept of Health See Health U S Department of
  Dept of National Defense, single department urged 185—OS
  Dept of Welfare 180—E 184—OS
  employees health division of U S P H S 409
  employees maternity leave for 185—OS
  Food and Drug Administration See Food
  Government A M A motion on dispersal of federal funds for control of cancer, 40
  Government Control of Medicine See Medicine state
  Government Hospital Building Program See Hill Burton Bill
  Government Hospitals See Hospitals
  Government positions specialists wanted for, 48
  Government's research program, 462—ab
  Military Academy courses in mental hygiene proposed for, 327—OS
  Navy See Navy
  of America Typhus Commission Medal See World War II Heroes
  of America Typhus Commission, members, typhus in, [Sadusk] *1194
  Pharmacopeia See Pharmacopeia
  Public Health Service See Health
  Veterans Administration: See Veterans Administration
  War with See World War II
UNIVERSITY See also Education, Medical, Schools, Medical, under names of specific universities as Columbia · Tulane
  hygiene, Congress of, Paris, 52; 118
  National Conference on Health in Colleges (3rd), 1217—E
  of California (grant for cancer research) 636
  of Cambridge, (gift for research in geriatrics by Nuffield Foundation) 1234
  of Colorado, (medical center), 1291
UNIVERSITY—Continued
  of Illinois, [U. S Army Mayo General Hospital leased to), 255; (research grants to), 878
  of Iowa. See State University of Iowa
  of Michigan, (teaching opportunity cooperative plan), 706
  of Texas, (grants to medical branch) 1229
  of Washington (clinical departments), 336
  pentagon be used as college for veterans, 871—OS
  Premedical Work See Basic Science; Education, Medical, premedical, Students, Medical
  Professors See Professors
  Students See Students; Students, Medical
UREA See also Thiouracil
  medium to differentiate Proteus and paracolon cultures, [Christensen] 136—ab
  Nitrogen in Blood See Blood urea
  treatment of suppurations of external auditory meatus, [Williams] 428—ab
UREIDE of Mesoxalic Acid See Alloxan
UREMIA, chronic, renal osteodystrophy, [Norman & others] *771
  treatment peritoneal irrigation, [Fine] 426—ab, [Goodyear & Beard] *1208
URETHRA, surgery, full thickness skin graft to repair in hypospadias, 970
  Transurethral Resection See Bladder paralysis
URETHRITIS, chronic, in women, [Burns] 966—ab
  Gonococcic See Gonorrhea
  in girls, [Roen] 570
  treatment, streptomycin, 855—E
URINARY SYSTEM See also Bladder; Kidneys Urethra
  grain mite infestation, [Crance] 1243—ab
  infection, streptomycin for, [Adcock & Plumb] *579, [Pool & Cook] *586, 855—E
  infections, mandelic acid, sulfonamides, arsenicals, penicillin for, [Pool & Cook] *584
  surgery, atelectasis during, [Faulconer] 647—ab
URINATION See Urine incontinence, Urine suppression
  Inducing. See Diuresis
URINE anthocyaninuria can beets tint or color urine blood red? 1254
  barbiturates, tests for, 279
  fluoride excretion in alkylation plant workers, [Largent] 1309—ab
  incontinence, enuresis start and stop method of treatment, [Jahr] 197
  incontinence in women, Gobell Stockel's operation, [Christensen] 730—ab
  incontinence, new method of cervicocystopexy, 56
  incontinence (vaginal), from fistulas, apparatus for control, [Castallo] *244
  Polyuria See Diabetes Insipidus
  Porphyria in See Porphyria
  Protein in See Albuminuria
  proteose treatment of allergy, [Rhoads] 135—ab
  Red See Porphyria, Urine anthocyaninuria
  sodium chloride excretion 146
  Sugar See also Diabetes Mellitus, Glycosuria
  sugar, pseudoglycosuria from penicillin, [Boldyreff] 715—C
  suppression, anuria, renal decapsulation and peritoneal dialysis for, [Reid] 503—ab
  surface tension hexylresorcinol effect on, [Inness-Brown] 1301—C
  urobilinogen test of liver function (Watson's), [Mateer & others] *913
UROBILINOGEN in Urine See Urine
UROGRAPHY See Pyelography
UROLOGY course at St Peter's and St Paul's hospitals, London, 118
  complications in spinal cord injury, [Bumpus & others] *366, (tidal drainage or irrigation in) [MacNeill] 1237—C
  Hispano-Portuguese Congress (5th) 567
URTICARIA, bee sting, [Reed] 68—ab
  penicillin, benadryl and pyribenzamine for [Pillsbury & others] *1255
  penicillin benadryl for, [Willcox] 428—ab, [Callaway] 891—ab
  penicillin, procaine for, [Dressler & Dwork] *849 (caution advised) [Waldbott] 1301—C
  treatment, new synthetic antihistaminics (3015 and 3277), 960
UTENSILS See Cooking and Eating Utensils
UTERUS See also Placenta
  adenomyosis, [Spatt] 129—ab
  Adnexa See Ovary, Oviducts
  cancer (cervical), interstitial radon needles vs x-rays via intravaginal cones for, [Taylor] 131—ab
  cancer (cervical), local recurrence 18 years after radium therapy, [Covington] *935
  cancer, diagnosis by vaginal smear, [Meigs] *75
  cancer of corpus, [Taylor] 1313—ab
  cancer, ratio in myoma, [Crossen] *595
  cancer, roentgen therapy, fracture of femoral neck after, [Kulseng-Hanssen] 574—ab
  Cervix. See also Uterus cancer (cervical)
  cervix, erosion or polyps, premenstrual bleeding, 214
  cervix, infectious granulomatous lesions, [Guerriero & others] *832
UTERUS—Continued
  cervix mucosa, ectopic pregnancy in, [Schneider] 131—ab
  cervix mucus, receptivity to spermatozoa, [Barton] 140—ab
  cervix, syphilis, [Guerriero & others] *834
  changes in Besnier-Boeck-Schaumann's disease, [Engelhard] 70—ab
  contraction and retraction in prolonged labor, [Odell & others] *735
  contraction (painful) during pregnancy, 214
  Hemorrhage (functional) · See Menstruation
  hemorrhage (post-menopausal), pathologic findings in, [Cheek] 425—ab
  hemorrhage, use of metreurynter in, 74
  intrauterine respiration of fetus, [Windle & Becker] 125—C
  intrauterine use of sulfanilamide, [Sadovsky] 890—ab
  inversion (acute), [Spain] 727—ab
  iodized oil injected into, venous intravasation after, [Bloomfield] 805—ab
  Mucosa: See Endometrium, Uterus, cervix
  tumors, myoma, radiation therapy, [Crossen & Crossen] *593
UVEA, sarcomas, 1284—E
UVULA: See Palate

V

VACCENIC ACID See Acid
VACCINATION See also Immunization, under names of specific diseases as Herpes zoster, Parotitis, Epidemic; Rabies, Smallpox
  autovaccination treatment of cancer, 111—E [Gross] 800—C
  BCG See Tuberculosis, immunization
  successful (1646) on troop ship, 183—E
VACCINE See also Encephalomyelitis, Influenza, Plague, Rabies, Typhus, Whooping Cough
  BCG See Tuberculosis, immunization
  Castaneda, 656
  laboratory to make, Puerto Rico, 336
  mouse brain, treatment of epidemic encephalitis, [Sabin] *281
VACCINIA See also Smallpox vaccination
  virus, penicillin effect on, [Gohar] 651—ab
VAGINA. See also Vulva
  cell examination for malignant growths, [Ayre] 205—ab
  discharge, Bacillus subtilis in cultures, 1320
  discharge (persistent) in child, 436
  douches, 508
  Fistula See Fistula
  Ramses, Vaginal Jelly and Applicator, N.N R, (Schmid) 1281
  smear, diagnosis of uterus cancer, [Meigs] *75
  urinary incontinence, apparatus to control, [Castallo] *244
VAGOTOMY See Nerves
VALENTINE, WILLARD L, death, 1230
VALLEY Fever See Coccidioidomycosis
ven der WIELEN, P, death, 1300
van RIJNBERK, G, retires, Netherlands, 712
VARICELLA See Chickenpox
VARICOSE VEINS, trauma and thrombophlebitis, 280
  treatment, interval suspension of distal stem of resected "blowouts," [Ostroff] 197—C
VARIOLA See Smallpox
VARNISH, contact dermatitis from Japanese rifles, [Hinman] 132—ab
VASCULAR See Blood Vessels
VASECTOMY will not prevent enlargement and cancer of prostate, 358
  as contraceptive, effects, 1254
VAUGHAN, Victor, first editor of *Hygeia*, 1922, [Fishbein] *929
VBEV, 422—BI
VEGECENE Sea, 883—BI
VEGETABLES See also Beets, Carrots
  Beech-Nut, with bacon, 937
  fats value for growth, [Basu] 68—ab
VEINS. See also Blood Vessels
  Caval See Vena Cava
  femoral, interruption in venous thrombosis [Allen & others] *1269
  Fistula See Fistula
  graft-vitallium tube technic for arteriovenous fistulas, [Heringman & others] *666
  Inflammation · See Thrombophlebitis
  Injection into See Injections intravenous
  intravasation of iodized oil after intrauterine injection, [Bloomfield] 805—ab
  Portal See Portal Vein
  Pulmonary, Embolism See Embolism
  Thrombosis See Thrombosis, venous
  Varicose See Varicose Veins
VELDEE MILTON, explains National Institute of Health, 851
VENA CAVA, interruption of, in venous thrombosis embolism, [Allen & others] *1268
VENEREAL DISEASE See also Chancroid · Gonorrhea; Prostitution; Syphilis
  committee on, 1903, [Fishbein] *611
  control conference by U. S Army, Japan 186
  Control Council established by War Dept, 486
  control, pamphlets by U S P H S, 1294
  control, request of Swedish Medical Board 712
  control, Swedes help fight in Poland, 1030
  control, USPHS annual report, 702
  incidence vs circumcision in Canadian Army, [Wilson] 1243—ab

- VENEREAL DISEASE—Continued
  - increase, N. Y. C., 637
  - Iowa Committee for Study of, 954
  - lectures, N. Y. C., 190
  - legislation, Norway, 1167
  - Public Health Institute closes its doors, Chicago, 334
  - treatment center (rapid), transferred to state department, W. Va., 1291
  - U. S. Army medical officers attend venereology classes, 186
- VENESECTION and hypertension, 1253
- VERMONT-New Hampshire Physicians Service, 112—OS
- VERRUCA plana juvenilis, 733
- VERTEBRA: See Spine
- VERTIGO: See also Syncope
  - aural, Meniere's syndrome, [Atkinson] 133– ab
  - camp, [Kuilman] 70—ab
  - cause; treatment, 434
  - scurvy and, [Ohnell] 430—ab
- VETERANS: See also American Legion; Veterans Administration
  - disabled, additional training under vocational rehabilitation act, 113
  - disabled, traffic regulations for car-driving amputees, 1219—OS
  - disabled, Walter Reed patients view "The Best Years of Our Lives," 46—OS
  - G. I. Bill of Rights: See G. I. Bill of Rights
  - Hospitals: See Hospitals
  - Medical: See Veterans, physician
  - Medical Care: See also Hospitals, veterans
  - medical care for families of, 481—OS
  - medical care, home town, 331
  - medical care program, Hawley stresses need of private hospitals in, 45—OS
  - medical care, those seeking urged to identify themselves, 948—OS
  - Pentagon be used for college for, 871—OS
  - Physician, A. M. A. Bureau of Information for: See A. M. A. Bureau of Information
  - Physician, Courses or Training for: See Education, Medical, graduate
  - physician, difficulty in securing hospital staff appointments, 45
  - physician, licensure and relocation (Joint Committee report), 43
  - physician, locations for practice of, 944—OS
  - physician, resident program for (Joint Committee report), 42
  - physician, Spokane County Society assists, 491
  - Physician Veterans of World War II ("Doc-Vets"), (protest deferment policy) 184—OS; (Dr. Arkinson heads) 1159—OS
  - physician, want hospitals to employ those with military service, 184—OS
  - tropical diseases in, [Sapero] 966—ab
  - widows may claim terminal leave pay, 329
  - women, 488
- VETERANS ADMINISTRATION, additional training under Vocational Rehabilitation Act, 113
  - Board of Roentgenology, [Birkelo & others] ★359; 399—E
  - contracts, A. M. A. resolutions on, 35
  - electroencephalography technicians needed, 113
  - Hospitals under Control of: See Hospitals, veterans
  - medical corps, A. M. A. resolution on A. M. A. fellowship of, 39
  - medical corps, establishment, (Joint Committee report), 44; 945—OS
  - medical reforms, Hawley criticizes Legion for opposing, 699—OS
  - medical research program (long range) by National Research Council, 1289
  - medical work periled by lack of funds, 787—OS
  - nurses, advanced training for, 1289
  - osteopaths to serve in, 186
  - paraplegic centers, 1020
  - patients without service connected disability, 482—OS
  - personnel ceiling in, drive for economy results, 699—OS
  - residency training in neurology, 186
  - resident program for physician veterans [Joint Committee report), 42
  - streptomycin allocation increased, 787—OS
  - tuberculosis case finding, "personal equation" in interpreting chest x-rays, 399—E
  - U. S. Army officers lent to, 113
- VI Antigen: See Typhoid
- VINCENT'S Infection: See Angina, Vincent's
- VINSON-Plummer syndrome: See Plummer
- VIOFORM treatment of amebiasis, 1042
- VIRGINIA, rural areas, medical facilities available, 251—OS
- VIRILISM, possible masculinizing tumor, 213
- VIRUS: See also Encephalitis, epidemic; Influenza; Myocarditis; Parotitis, Epidemic; [illegible]
  - [illegible] tis, Epidemic
  - [illegible] nimal origin, [Meyer [illegible]
  - [illegible] diagnosis, Chadwick [illegible] 1299
  - [illegible] Woods continues research on, 185—OS
  - Pneumonia: See Pneumonia, atypical primary
  - receptor gradient in red cells, [Burnet] 67—ab
- VISCEROPTOSIS: See Splanchnoptosis
- VISION: See also Eyes; Glasses; Ophthalmology
  - binocular, orthoptics, Council report, [Lancaster & Lancaster] ★1211
  - fields of, changes in, confirmed by pathologic diagnosis, [Lyle] ★517
  - Loss of: See Blindness
  - motor component of retinal stimuli, 713
  - Nearsighted: See Myopia
  - symptoms of psychosomatic disorders, [Harrington] ★669
- VITAL STATISTICS, birth rate, highest in 23 years, *England*, 261
  - birth rate, Russia, 713
  - birth rate, U. S. shows increase, 105—OS; 1219—OS; 1295
  - birth registration, record, Ill., 115
  - Death Rate: See also Accidents, fatal; Death, cause of; Infants, mortality; Maternity mortality; under names of specific diseases
  - death rate, official number, 192
  - death rate, USPHS annual report, 702
  - death rate, violent deaths in Cook County, Ill., 412
  - Netherlands, 56
- VITALLIUM mold arthroplasty in old femur fractures, [Smith-Petersen] 1308—ab
  - tube, venous graft to repair arteriovenous fistulas, [Heringman & others] ★666
- VITAMINS, Bates Preparations, 264—BI
  - Class' Vitamin, Mineral and Herb Formula, 568—BI
  - Curley-Bu-T-Caps; Curley-Cal-Pans, 264—BI
  - Deficiency: See also under names of specific vitamins
  - deficiency, avitaminosis in Turkey, 1236
  - Energy Release from Food (motion picture review), 717
  - new, in butter: vaccenic acid, 1299
  - question of best animal feeds, effect on milk supply, 775—E
  - VBEV, 422—BI
- VITAMINS A and bone growth, [Mellanby] 1316—ab
  - cytral a fragment of, 1235
  - Imported Sea Vegetables Vitaminized with Added Vitamin A, 883—BI
  - in liver-impairment, [Mateer & others] ★915
- VITAMINS B COMPLEX: See also Acid, *p*-aminobenzoic; Acid, folic; Pellagra
  - deficiency in pregnancy, [Vilter] 206—ab
  - Huzzah Vitamin B_1 and B_2 Supplement, 422—BI
  - in liver impairment, [Mateer & others] ★915
  - injection to determine circulation time, [Swenson] 424—ab
  - suppress estrogenic function in women, affect libido or hasten menopause? 1253
  - syrup, N.N.R., (Thompson) 619
  - Vita-Pure B-Complex Vitamins, 568—BI
  - B_1: See also Acid, nicotinic; Thiamine Hydrochloride
  - B_1, Beawun Vitamin B_1 Tablets, 568—BI
  - B_1 deficiency, sclerogenic cardiopathy from, [Bianchi] 430—ab
  - B_1, electrocardiographic changes due to inanition, [Forster] 730—ab
  - B_1 treatment of headache after spinal anesthesia, [Bazzocchi] 430—ab
  - B_2: See Riboflavin
  - B_6: See Pyridoxine
- VITAMINS C: See also Acid, ascorbic
  - Deficiency: See also Scurvy
  - deficiency, effect on wound healing, [Wolfer] 1313—ab
  - dissolution of substance of teeth by lemon juice, 1218—E
  - treatment of traumatic shock, [Holmes] 649—ab
  - treatment of trench mouth and scurvy, [Schnurman] 1036—ab
- VITAMINS D, high potency, preparations, (Council discusses), 851
  - D_2 and calcium for lupus vulgaris, [Hermans] 504—ab
- VITAMINS K: See also Menadione
  - Bouillaud's disease and, [Lutembacher] 1172—ab
  - circumcision of newborn (reply), [Rosenthal] 436
  - treatment in obstructive jaundice, [Snell] ★1178
  - treatment (routine), before delivery, 970
- VITAMINS P, capillaries resistance and, [Calmiche] 141—ab
- VIT-AN-MIN, 568—BI
- VITA-PURE B-Complex Vitamins, 568—BI
- VIVISECTION: See Animal Experimentation
- VOCABULARY: See Terminology
- VOCATIONAL Rehabilitation: See Rehabilitation
- VOICE: See also Speakers; Speech
  - artificial aids, where to obtain, 146
  - masculinizing tumor, 213
- VOLUNTEERS to Aid Hospitals: See Nurses aides
- VOLVULUS: See Colon
- VOMITING: See also Motion Sickness
  - of Blood: See Hematemesis
  - postoperative, and sedatives, 810
- VON'S Tablets, 568—BI
- VULVA, ulcer, bacitracin for, [Meleney & Johnson] ★677

W

- WAGES: See also Income
  - A. M. A. resolution on Bituminous Coal Mine Wage Agreement, 35
  - nurses request higher pay, Sweden, 1030
  - salaries of junior hospital doctors, Norway, 797
  - Tax on: See Tax, Income
- WAGNER-MURRAY-DINGELL Bill, reintroduced, 631—OS
- WAKE Forest College: See Bowman Gray School
- WALLACE, W. V., personal, 790
- WAR: See also Military Medicine; Spanish American War; World War
  - Assets Administration, Sale of Surplus Supplies: See Medical Supplies, surplus
  - Casualties: See World War II
  - Heroes: See World War II, Heroes
  - Needy: See World War II, needy
  - Prisoners: See World War II, Prisoners
  - Veterans: See Veterans
  - Wounds: See World War II, wounds
- WARD Helpers: See Hospitals, personnel; Nurses, aides
- WARM SPRINGS Foundation: See Foundations, Georgia Warm Springs
- WARTS: See Verruca
- WASHINGTON Office: See American Medical Association
  - State Bureau, A. M. A. seal of acceptance to, 112—OS
  - University: See also University of Washington
  - University (St. Louis) (regional scholarships), 413; (course in hospital administration) 1163
- WATER: See also Flood; Ice; Steam
  - etiology of poliomyelitis, [Scobey] 721—ab
  - fluorine in, safe level, 734
  - Leptospirosis canicola, [Baber] 140—ab
  - Metabolism: See also Dehydration
  - metabolism, disorder in hypertension, [Perera] 499—ab
  - Mineral: See Health resorts; Mineral water
  - Pollution: See also Sewage
  - pollution by rivers, (hearings on bill) 1219—OS; (Illinois) 1292
  - supply, Croton reservoir, Dr. Pallen accused of poisoning; A. M. A. resolution protesting action, 1865, [Fishbein] ★24
  - supply, nitrates in well water, methemoglobinemia in infants, [Faucett] 271—ab
  - test in Addison's disease, [Levy] 136—ab
  - Therapeutic Use: See Hydrotherapy
  - transportation of mosquitoes by ships in old tires, [Pratt] 725—ab
- WATSON'S urobilinogen test of liver function, [Mateer & others] ★913
- WEARING Apparel: See Clothing
- WEATHER changes and eclampsia, [Sapeika] 894—ab
- WEIGHT: See Body weight; Infants, Newborn; Obesity
- WEIGHTS AND MEASURES, metric system, 1879, [Fishbein] ★177
- WEIL'S Disease: See Jaundice, spirochetal
- WEIL-FELIX REACTION, specificity, 358
  - in typhus, [Sadusk] ★1198
- WEISKOTTEN, H. G., chairman of A. M. A. Council, 34—E
- WELFARE, U. S. Dept. of, 180—E; 184—OS
- WELL Water: See Water supply
- WEN: See Steatoma
- WERNICKE'S Encephalopathy: See Polioencephalitis
- WEST, OLIN, field secretary, 1922, [Fishbein] ★926; (made general manager, 1924) ★935
  - President-Elect, resigns, 1012—E; 1016
- WEST'S Imported Sea Vegetable Tablets, 883—BI
- WEST VIRGINIA Cancer Society Contest: See Prizes
- WESTERN RESERVE University, alumni, war service, 1164
- WETTING AGENTS: See Detergents; Zephiran chloride
- WHAYNE, T. F., personal, 329
- WHEAT: See also Bread
  - germ, Hayden's Carmelized, 264—BI
- WHISKY treatment of influenza in 1920, [Fishbein] ★924
- "WHITE PAPER": See National Health Service Act
- WHOOPING COUGH, skin test reagent, standardized, [Felton] 892—ab
  - vaccine, [Waddell] 203—ab
  - vaccine, booster injections, [Kendrick] 268—ab
- WILDE, CHARLES FENWICK, death, 492
- WILDER Lecture: See Lectures
- WINE of Cardui, 1915, [Fishbein] ★836
- WIRELESS: See Radio; Television
- WOMAN'S AUXILIARY, A.M.A., established, 1922, [Fishbein] ★928
  - A.M.A. resolution on, 38
  - COOKBOOK FOR HUNGRY DOCTORS sale to aid Freeman student loan fund, Pa., 877
- WOMEN: See also Marriage; Maternity; Menstruation; Menopause
  - amount of clothing worn by, in 1888, [Fishbein] ★315
  - in Medicine: See Nurses; Physicians, women

WOMEN—Continued
  Public Health Education Committee of, 1910, [Fishbein] ★762
  war veterans, 488
  Workers: See Industrial Health, workers
WOODS, ALBERT F., continue research in plant disease viruses, 185—OS
WOODWARD, W. C., A.M.A. Bureau of Legal Medicine, 1923, [Fishbein] ★929; ★931
WORDS AND PHRASES: See Terminology; Medicolegal Abstracts at end of letter M
WORK, HUBERT, presidential address of, 1922, [Fishbein] ★927
WORK: See also Effort; Exercise; Industrial Health
  Compensation for: See Wages
  output and caloric intake, 322—E
  Therapeutic Use: See Occupational Therapy
WORKMEN'S COMPENSATION: See Industrial Accidents; Medicolegal Abstracts at end of letter M
WORLD HEALTH ORGANIZATION, (Calderone heads Interim Commission) 117; (international epidemiologic reporting service by Interim Commission) 258; (outline of work) 405—OS; (constitution, USPHS annual report) 702; (constitution expected to be ratified) 788—OS; (Interim Commission meets March 31) 956; (participation of U. S. in) 1161; 1221—OS; (allocate UNRRA funds to) 1231
WORLD LEAGUE: See United Nations
WORLD WAR I (1914-1918), A.M.A. participation in, [Fishbein] ★838; ★839; ★841; ★842; ★848
  Veterans: See American Legion
WORLD WAR II (1939-1945), amebiasis in Americans in India, [Klatskin] 500—ab
  atomic bomb effect at Hiroshima and Nagasaki, 1159—OS
  atomic warfare, medical aspects, 1225
  Casualties: See also World War II, Heroes, for names of physicians killed in action
  casualties (battle), fatal pulmonary embolisms in, [Hamilton] 572—ab
  casualties, death (sudden and unexpected) of young soldiers, 325—E; [Moritz] 721—ab
  casualties (psychiatric), high incidence, [Hanley] 344—C
  encephalitis (epidemic) in military personnel, [Sabin] ★281
  GI Bill of Rights: See GI Bill
  Honorably Discharged: See subhead; *Medical Officers*
  hospital (Kings County), dedicate memorial Plaque to 816 employees, 955
  Killed in Action: See World War II, Heroes
  libraries devastated by, periodicals and books needed, [Taylor] 345—C; [Kouwer] 715—C; 878
  Medical Officers: See also Veterans, physician
  medical officers, Airborne Medical Society formed, England, 261
  medical officers, death while in service, 109—E
  medical officers, list of released by Navy, 254; 333; 411; 635
  medical officers, list of, released by USPHS, 1289
  medical officers, list of, separated from service by Army, 188; 332; 410; 704; 952; 1021; 1226; 1290
  medical officers (Navy), not allowed to resign; Captain Eaton's reply, 44
  medical officers (125) released by Army to U.S.P.H.S., 46—OS
  medical officers, released by U.S.P.H.S., number, (Joint Committee report), 45; 1289
  Medical Officers, Returning to Private Practice: See *Veterans, physicians*
  medical officers, separated from service by Army, statistics, 45
  medical officers 3 or more years on Induction Examining Board, 335
  medical officers, tribute to by Brig. Gen. Bliss, 481—E
  needy, medical supply for, 1025
  nurses, U. S. Cadet Nurse Corps, 110—E
  nutrition in Switzerland, [Fleisch] 354—ab
  Officers: See subhead; Medical Officers
  Physicians: See also subhead: Medical Officers
  Physicians, A. M. A. Bureau of Information for those Returning: See American Medical Association
  physicians in civilian practice, 5,000 questionnaires from A. M. A. Committee, 480—E; [Dickinson] 548—ab; 550—ab
  Postwar, UNRRA: See United Nations Relief and Rehabilitation Administration
  prisoners (American), pellagra in, Philippines, [Lewis] 501—ab
  prisoners, brutalities by Germans, Dr. Ivy's report, 35; [Wertham] 645—C
  prisoners, caloric intake and industrial output, 322—E
  prisoners, camp vertigo, [Kuilman] 70—ab
  prisoners, chest surveys in Dachau camp, [Platt] 65—ab
  prisoners, nutritional amblyopia in those liberated [Bloom] 62—ab
  prisoners, typhus epidemics in France, [Lemierre] 651—ab
WORLD WAR II—Continued
  schistosomiasis japonica in Leyte reoccupation, [Winkenwerder] 1242—ab
  selectees, physical examination in final months, 854—E
  service men's Christmas mail lost at sea, 486
  Switzer (M. E.) Certificate of Merit to, 48
  Syphilis in: See subhead: Venereal Disease
  tongue changes in British troops not due to deficiency disease, [Smith] 68—ab
  tonsillitis and pharyngitis, [Commission on Acute Respiratory Diseases] ★588
  tropical deterioration in troops, 1216—E
  tropical disease, positive syphilis test after, 73
  tsutsugamushi disease in U. S. Army, [Sadusk] ★1193
  typhus in U. S. Army after immunization, [Sadusk] ★1192
  vaccinations on a troop ship, 183—E
  venereal disease, syphilis in 1400 soldiers, penicillin for, [Sternberg & Leifer] ★1
  Veterans: See Veterans
  Western Reserve alumni service in, 1164
  wound shock, [Stewart] ★216
  wounded, replacement of blood [Snyder] ★219
  wounds of ventricles of brain, [Pitts] 1240—ab
  wounds, traumatic chylothorax resulting, [Berry] ★319
  wounds (open), bacteriology of, [Rustigian & Cipriani] ★224
WORLD WAR II, HEROES
  Abbett (A. L.), Bronze Star, 634
  Anderson (J. B.), Legion of Merit, 330
  Anderson (R. D.), Navy Commendation Ribbon, 950
  Asbury (C. W.), Bronze Star, 487
  Baird (C. L.), Legion of Merit, 634
  Barnard (L. B.), Legion of Merit, 487
  Barnes (R. H.), Bronze Star, 487
  Barton (W. E.), Legion of Merit, 487
  Bloomberg (W.), Legion of Merit, 252
  Bolibaugh (O. B.), U. S. Typhus Commission Medal, 1162
  Bookout (A. C.), killed in action, 711
  Boucher (H. E.), Legion of Merit, 1224
  Brett (J. D.), Legion of Merit, 1162
  Brewer (J. I.), Legion of Merit, 950
  Brislen (A. J.), Army Commendation Ribbon, 47
  Brown (A. K.), Legion of Merit, 47
  Buckhold (W. W.), killed in action, 340
  Byrne (W. A.), Bronze Star, 331
  Callahan (J. J.), Legion of Merit, 330
  Campbell (P. A.), Legion of Merit, 486
  Canning (A. J.), Oak Leaf Cluster to Legion of Merit, 47
  Carroll (F. B.), Legion of Merit, 330
  Ciccone (R.), Army Commendation Ribbon, 1162
  Comstock (J. A.), Bronze Star, 634
  Cook (W. L., Jr.), Legion of Merit, 487
  Corr (W. P.), Legion of Merit, 486
  Craige (B., Jr.), Army Commendation Ribbon, 1224
  Cromartie (W. J.), Legion of Merit, 487
  Denny (E. R.), Legion of Merit, 1224
  Dieuaide (F. R.), Legion of Merit, 252
  Eisendorfer (A.), Army Commendation Ribbon, 1019
  Elkins (C. W.), Legion of Merit, 634
  Eschenbrenner (J. W.), Legion of Merit, 1020
  Fabing (H. D.), Legion of Merit, 1288
  Farnham (R. K.), Legion of Merit, 487
  Ferderber (M. B.), Legion of Merit, 1162
  Ferenbaugh (T. L.), Legion of Merit, 409
  Fielding (R. E.), Bronze Star and Gold Star, 1225
  Friedman (N. B.), Army Commendation Ribbon, 1288
  Fulton (J. R.), Legion of Merit, 560
  Gaskill (R. C.) Legion of Merit, 1224
  Goldman, (J. L.), Army Commendation Ribbon, 252
  Gordon, (J. E.), Legion of Merit and U. S. Typhus Commission Medal, 874—OS
  Greeley (D. M.), U. S. of America Typhus Commission Medal, 1019
  Greenwell (A. W.), Legion of Merit, 486
  Guidotti (F. P.), Legion of Merit, 330
  Guttmacher (M.), Legion of Merit, 487
  Ham (T. H.), Legion of Merit, 487
  Harbison (S. P.), Legion of Merit, 487
  Hargreaves (J.), Bronze Star, 1288
  Heaton (L. D.), Oak Leaf Cluster to Legion of Merit, 634
  Heinemann (A. D.), Army Commendation Ribbon, 409
  Hennessy (H. R.), Bronze Star Medal, 330; (correction) 487
  Henze (C.), Legion of Merit, 1020
  Hines (L. W.), Legion of Merit, 1225
  Hodges (R. G.), Legion of Merit, 950
  Horgan (E.), Legion of Merit, 1224
  Ingham County Medical Society members cited for volunteer service, Mich., 256
  Kirk (N. T.), Legion of Merit, 252
  Kostrubala, (J. G.), Army Commendation Ribbon, 559
  Lamy (J. E.), Silver Star, 634
  Laudicina (A. P.), killed in action, 959
  Layne (J. A.) Legion of Merit, 409
  Leifer (W.), Legion of Merit, 559
WORLD WAR II, HEROES—Continued
  Leone (G. E.), Legion of Merit, 1018
  Little (A. R.), Air Medal, 1020
  Long (A. P.) Legion of Merit, 252
  Long (F. B., Jr.), killed in action, 120
  Long (J. O.), killed in action, 711
  LoPinto (A. F.), Navy Commendation Ribbon, 48
  Lovelace (W. R., II), Legion of Merit, 1162
  Lowry (R. H.), Legion of Merit, 1224
  Luck (J. V.), Legion of Merit, 559
  McAfee (L. B.), Legion of Merit, 1018
  McDonough (F. E.), Legion of Merit, 1288
  McLane (A. D.), Legion of Merit, 1162
  Meade (R. H.), Legion of Merit, 634
  Merkel (E. E.), Bronze Star, 874
  Morton (P. H.), Air Medal, 1225
  Most (H.), Legion of Merit, 874; (correction) 1020
  Murray (J. M.), Legion of Merit, 1288
  Nagler (B), Army Commendation Ribbon, 409
  Paullin (J. E.), Medal for Merit, 950
  Payne (B. F.), Army Commendation Ribbon, 1224
  Pennington (W. H.), Legion of Merit, 1019
  physicians killed in action, statistics, 109—E
  physicians, USPHS officers (5) killed in service, 702
  Pickard (K.), Bronze Star, 634
  Prather (H. L.), Legion of Merit, 1019
  prisoners, USPHS officers, 702
  Robinson (P. I.), Oak Leaf Cluster to Legion of Merit, 1224
  Romansky (M. J.), Legion of Merit, 1020
  Savage (H. W.), Legion of Merit, 330
  Shapiro (M. A.), Silver Star and Oak Leaf Cluster to Silver Star, 1288
  Skelton (R.), Legion of Merit, 486
  Smadel (J. E.), U. S. of America Typhus Commission Medal, 1224
  Spruit (C. B.), Distinguished Service Medal, 634
  Steinberg (S.), Army Commendation Ribbon, 47; (correction) 487
  Streit (P. H.), Legion of Merit, 874—OS
  Streuter (L. W.), killed in action, 120
  Trumbull (R. A.), Legion of Merit, 330
  Tucker (E. W.), Bronze Star Medal, 1162
  van Ravenswaay (A. C.), Legion of Merit, 559
  Verdel (L. F.), Legion of Merit, 1019
  von Pohle (C. L.), Legion of Merit, 1019
  Waterous (W. H.), Legion of Merit, 1288
  Whayne (T. F.), U. S. of America Typhus Commission Medal, 1019
  Williams (R. P.), Legion of Merit, 1162
  Wollack (A. R.), Soldier's Medal, 330
  Woodland (J. C.), Legion of Merit, 486
WOUNDED: See World War II, wounded
  Transport of: See Ambulances
WOUNDS: See also Accidents; Burns; Trauma; under specific organs and regions
  bacteriology of open wounds, [Rustigian & Cipirani] ★224
  healing, animal tissue extracts effect on, [Hoffman] 720—ab
  healing, chlorophyll for, [Bowers] 1240—ab
  healing in vitamin C deficiency, [Wolfer] 1313—ab
  healing of open pilonidal wound, [Blaisdell], ★916
  infected, bacitracin for [Meleney & Johnson] ★677
  penetrating, of knee, [Hampton] 349—ab
  shock, [Stewart] ★216
  suppuration, pabulum theory, [Lyons] ★215
  Suture of: See Suture
  treatment, blood replacement, [Snyder] ★219
  treatment, sulfonamides, penicillin, streptomycin, [Lyons] ★215
  treatment, symposium on, [Lyons] ★215; [Stewart] ★216; [Snyder] ★219; [Rustigian & Cipriani] ★224; (discussion) 229
  War: See World War II
WRIST injuries in elderly, [Griffiths] 806—ab
WRITING: See also Articles; Books; Journals; Terminology
  American Physicians' Literary Guild, 257; 1165
  Essay Contest: See Prizes
  Prescriptions: See Prescriptions

X

XANTHOMATOSIS: See Niemann-Pick Disease
X-RAYS: See Roentgen Rays

Y

YALE University, (graduate program successful) 253; (receives Klebs Library of Medical History) 334; (Summer School of Alcohol Studies) 636
YAWS: See Frambesia
YELLOW FEVER and plague, 563
  vaccination of intending travelers, 643
YOUTH: See Adolescence

Z

ZEIT Lecture: See Lectures
ZEPHIRAN Chloride, N.N.R., (Winthrop) 179
ZONA ophthalmica: See Herpes Zoster, ophthalmicus
ZONDEK-Aschheim Test: See Pregnancy
ZOSTER: See Herpes Zoster

AUTHOR INDEX

In this Index are the names of the authors of articles which have appeared in The Journal, the names of those who have read papers before Societies as published in The Journal and those whose articles have been abstracted in the Current Medical Literature Department. The * preceding the page reference indicates that the article appeared in full in The Journal.

For subject index see page 1323

A

Aarseth, S , 968
Abbe, D , 570
Abbott, K H , 723
Abernethy, T. J , ★588
Abramowicz, I , 352
Abrams, I , 886
Abramson, H., 570
Acevedo Olvera, A , 1317
Adams, H. D , 650
Adcock, J D , ★579
Adler, H F , ★373
Adriani, J , 129
Agin, L J., 1312
Aiken, D , 207
de Ajuriaguerra, 806
Aldrich, C A , 1314
d'Allaines, F., 729
Allen, A W , 132, ★1268
Allen, F. M , ★377
Almklov, J H , 570
d'Alotto, V , 806
Altemeier, W. A , 1036
Alture-Werber, E , 61, 62
Alvarez, C , 1248
Alves, W , 69
Amos, F B , 124
Amspacher, W H , 571
Amyot, R , 502
Andelman, M B , 65
Anderson, H C , 135
Anderson, M W , 885
Anderson, S G , 67
Andreyev, S V , 431
Andrus, W D de W , 720
Angevine, D M , 572
Appelgren, A , 895
Arho, A P , 142
Armas-Cruz, R , 1247
Armstrong, C , 272
Armstrong, W D 573
Astwood, E B , 500
Atkinson, A J , ★373, 1307
Atkinson, M , 133
Atwell, R J , 205
Aufranc, O E , 1308
Aycock, T B , ★1258
Ayre, J E , 205

B

Baber, M D , 140
Bachmann, G , 202
Badger, G F , ★588
Baer, R L , ★293
Bagnall, D J T , 428
Bailey, O T , 721
Balthazar, E , 893, 893
Baltz, J I , ★909
Bancroft-Livingston, G , 894
Bang, F B 132
Barber, F 1315
Barefoot, S W , 720, 891
Bargen, J A , 890
Baritell, A L 1314
Barkan, O , ★526
Barker, C , 549
Barker, N W , 885
Barnes, R W , ★456
Baronofsky, I D , 1036
Barrera, S E , 500
Barron, D H , 207
Barrow, D W , 63
Bartels, E C , 893
Barton, M , 140
Bartstra, H K G , 1317
Bashatli, A , 651
Bass, H E , 499
Bastable, S , ★771
Basu, K P , 68
Bauer, W W , 548
Baylin, G J , 1313
Bayliss, M , 350, 725
Bayrd, E D , ★147
Bazzocchi, G , 430
Beard, D E 139, ★1208
Beard, J W , ★588
Beard, R R , 720
Beck, A C , ★78
Beck, G M , 726
Becker, E R , 202
Becker, R F , 125
Beerer, W F , 1313
Beecham, C. T , 425
Beck C H , 895
Beer, K , 967
Behnke, A R , ★450
Beierwaltes, W H , 570
Belart, W , 141
Bell, G O , 893
Bell, J C R , 208
Ben-Asher, S , 348
Bercæller, A , 804
Berger, K E , ★600
Bergström, E , 1318
Berman, J K , 348
Berman, L , 127
Berry, R L , 66
Berry, W H , ★319
Bersick, S. R , 131
Best, M M , 348
Bezerra, D A , 893
Bianchi, A E , 430
Bianco, A A , 272
Bieri, J , 503
Bierman, H R , ★522
Bigby M A M , 727
Bigger, I A , ★513
Biggs, R , 805
Birkelo, C C , ★359
Birnkrant, W B , 720
Bishop, L K , ★1277
Bjørnstad, R , 1248
Black, D A K , 352
Black G H B , 1316
Blackman, S , 723
Blain, A , 134
Blair, D M , 69
Blaisdell, P. C , ★916
Blakely, E , 426
Blalock A , 426
Blankenhorn, M A , 137
Blegen, H M , ★1207
Blood, D W , 499
Bloom, S M , 62
Bloomfield, A , 805
Bluestone, E M , ★1051
Bohn, W , ★296
Bohrod, M G , 885
Boisvert P J , 132
Boldyreff, E B , 715
Boots R H , ★752
Borisvra, E I , 431
Borman M C , ★394
Borst J R , 968
Bottone, J J , 1311
Boulin, R , 1038
de Bourgraaf, J E , 730
Bowers, W F , 1240
Bowman, M C , 348
Boyd, E M , 716
Boyd, H B , 1308
Boyd, M F , 135
Brachetto-Brian, D , 1317
Bradley, W F , ★459
Bradshaw, H H , 348
Brandly, W J , 888
Brannon, E S , 424
Brazier, M A B , 721
Brian, E W , 351
Bridge E M , 271, 570
Bridge E V , 1308
Bridges, W C , ★16
Broadbent, T R , 204
Brockman, N W , 889
Bromberg, Y M , 890
Bronson, L H , 500
Brosnan, J T , 351
Broster L R , 68
Broun, G O , ★178
Brouwer, S W , ★909
Browder, J , 272
Brown, A , 1315
Brown, H W , 268
Brown, J B , 720
Brown, M J , 1241
Brown, R H , ★661, 721
Brown, S , 1245
Brown, W T , 207
Brownlee G , 1246
Brunel, E , 429
Bryce, L M , 805
Buer, A. W., 1317
Buerki, R C , 782
Bumpus, H C , Jr , ★366
Bundesen, H N , 886
Burk, L B , Jr , 1314
Burke, F. G , 892
Burkhardt, W L , ★373
Burks, C. S , 202
Burlingame, C C , ★971
Burnet, F M , 67, 67, 67, 140
Burnett, C W. F., 1037
Burns, E , 966
Bushby, S. R M , 574
Bussell, L J , 728
Butt, A J , 966
Butterworth, S , 885

C

Cabello, J , 1247
Calihan, R J., 134
Calkins, E , 136
Callahan, F F , 138
Callahan, W. P., Jr , 724
Callaway, J L , 891
Cameron, C , 207, 429
Cammaert, C A , 968
Camp, J D., 1171
Campbell, A S , 349
Campbell, K N , 66
Campos, J. M C , 730
Cannon, B , 720
Cardoso, L E , 652
Carpenter, G K , 349
Carroll, W W , 1313
Carruthers, L B , 1246
Case, P. H , 722
Casey, A. E , 65, 886
Caso, E K , ★169
Cassells, D A K , 352
Castillo, M A , ★244
Castex, M R , 806
Cattell, R B , 273
Cave, H W , 132
Certonciny, A , 1317
Chamberlain, W E , ★359
Chang, G C T , 131
Chapman, W P , ★741
Cheek, D B , 425
Chevallier, P , 353
Chiavacci, L V , 1306
Chin, H , ★445
Chisholm, T C , 134
Christensen, L Ø , 730
Christensen, W B , 136
Christie, A , 202
Chrysanthis, K , 354
Chu, L W , 131, 571
Cieslak, A K , 722
Cipriani, A , ★224, 1306
Civeira, F , 503
Clagett, O T 138
Clark, E G , 425
Clark, K B 1308
Clark, W. M , 573
Clarke, G H , 570
Clarke, W , 894
Clavel, C , 895
Clayton-Jones, E , 1316
Clegg, J W , 68, 208
Cleland, G , 352
deClercq, F , 729
Cluer, E H , 274
Coggeshall, L T , 1238
Cohen, A , ★749
Cohen, M J , 503
Cohn, M L , 207
Cole, L M , 720
Collins, E N , 1171
Collins, S D , 649
Colp, R , 890
Colvert J R , ★909
Comroe, J H , Jr , 886
Conn, J W , 128
Cook E N , ★584
Cook, S F , 1308
Coombs, F S , 61
Cooney, E A , 203
Cooper, O , 865
Cope, O , 426
Corper, H J , 207
Corrigan, F L , 805
CoTui, 272, 1312
Council, F. E , 128
Covington, E E , ★935
Cowan, F. A , 1305
Cox, H R , ★820
Crafoord, C , 138
Cramer, F. J , 133
Crance, A M , 1243
Crawford, T , 728
Cressy, N. L , ★588
Crile, G., Jr., 648
Crosby, R C , 203
Crossen, H. S , ★593
Crossen, R J , ★593
Crossman, L W., ★377
Cruthirds, A E , 131
Culbertson, J T , 269
Curbelo Hernandez, A , 1217
Curphey, T. J , ★1062
Curry, J. J., ★243
Custer, W. C , 66
Czebrinski, E W., 64

D

Dahl-Iversen, E , 142
Dalgaard, J B , 806
Dameshek, W , 1306
Damiani, C R , 1036
Daniels, W B , 888
Darling, D , 501
Dash, H H , 63
Davidsohn, I , 345
Davies, D T , 728
Davis, C B , Jr , ★461
Davis, D E , 131
Davis, D R , 966
Davis, G L , 860
Davis, J E , 425
Davis, H A , ★663
Davis, W D , 129
Davis, W S , 1310
Davison, T C , 1245
Davison, W T , 887
Dawson, E K , 207
Day, G , 428
DeBakey, M E , 1036
Debray, J R , 895
Decoursey, E , 350
DeLamater, E D , 1303
Denize, A , 804
Denolin, H , 729
Denstad, T , 1038
DeOreo, G A , 720
Derbyshire, R C , 1313
Desmarais, M H L , 67
deTakats, G , ★441
Deuel, H J , Jr , 1304
de Wardener, H E , 1246
Dhont, J , 1317
Dickinson, F G , ★483 548, ★1014, ★1222, ★1285
Dickson, J A , 138
Dillon, J B , ★829
Dingemanse, E , 730
Dingle, J H , ★588, 888
Dingwall, J A , 720
DiPalma, J R , 127
Dirkse, P R , 499
Dixon, C F , 206
Doan C A , 128
Dodd, K , 886, 893
Dodds, E C , 352
Domanig, E , 504
Donaldson, G A , ★1268
Donnelly, B A , 649
Dostrovsky, A , 269
Doty, E J , 1241
Doughty, J F., 862
Dowling H F , 270, ★657, 1171, 1309
Downing, J G , ★299
Downs R A , 499
Dragstedt, L R 1168
Drake, J R , 134
Drake, T G H , 647
Dressler, S , ★849
Drucker, A P , 721
Dubbs, A W , ★749
Dudgeon, J A , 274
Dufourt, A , 141
Dumas, J , 895
Duncan, C J , 803
Dundon, C C , 273
Dunn, J. H , 206
Dunner, L , 428
Duprez, A , 729
Durieu, H , 729
Dutton, L O , 965
Dwork, R E , ★849

E

Eagle, H , 136
Eaton, M D , 1303
Echlin, F. A , 205
Eddie, B , ★822
Edwards, E W , 724
Eerland, L D , 431
Ehrlich, J. C , 571
Eldering, G , 268
Ellenberg, M , 424
Ellett, E C , 1032
Ellis, F. A , 1214
Emmett, J L , 206
Enders, J F , 350, 501
Engelhard, J L B , 70
Ensign, P. R , 271
Ensor, C , 202
Erf, L A , 62
Ericksen, O C , ★616
Ershoff, B H , 1304
Escalle, L J , 729
Espersen, T , 142
Estren, S , 1306
Evans, E I , ★513
Evans, H S , 723
Evans, W. F , 424
Evoy, M H , ★441

F

Faber, L A , Jr , 968
Faber, M , 70, 652
Fallon, J , 351
Falls, H F , ★171
Farinas, P L , 272
Farmer, C J , 1313
Fasciolo, J C , 61
Fashena G J , 893
Faucett, R E , 572
Faucett, R L , 271
Faulconer, A , Jr 647
Faust, E C , 201
Fein, G , 1305
Feinberg, A R , 1309
Feinberg, S M , 269, 1309
Feinstein, H R , 131
Feldman, F , 500
Feldman, W H , 269
Feller, A E , ★588
Felsovanyi, A , 425
Felton, H M , 892
Ferguson, R G , 889
Fergusson, J D , 69
Fernandes, J S , 893
Fernandez Brito, C , 1247
Fetter, N R , 137
Fiehrer, A , 353
Figge, F H J , ★105
Filley, G F , 270
Finch, C A , 61
Findlay, C W , Jr , 1310
Findlay, G M , 69
Fine, J , 426
Fink, I , 804
Finland, M , 426
Fishbein, M , ★23, ★100, ★174, ★235, ★310, ★383, ★464, ★533, ★605, ★681, ★761, ★836, ★923
Fishbein, W I , 65, 886
Fisher, S , 1305
Fleisch, A , 354
Fleischman, R , 136
Flood, J M , 891
Florey, M E , 727
Florman, A L 128
Flynn, J M , 61
Fodden, J. H , 140
Foley, G E , 1311
Foltz, T. P , 891
Fontaine, R , 429

Ford R , 721
Foregger, R , ★1200
Forestier, J , 1317
Forgarasi, D , 1248
Forrester, J S , 892
Forshaw, H W , 429
Forster, E , 429
Forster, R , 730
Foster-Carter, A F , 68
Fowler, E P , Jr , ★87
Frada, G , 354
Francis, N , 803
Frank, G , 804
Frank, H A , 426
Frank, L L , 804
Frater, K , 69
Fredriksen, W 208
Freed, S C , ★369, 1032
Freeman, H , 140
Freeman, W , 891
Freyhan, F A , 1032
Friedlaender, S 269, 1309
Friedman, N B , 200
Frish, A R , 574, 1246
Fuentes Acevedo, Z , 1247
Furcolow, M L , 1245
Furtado, D 208
Furth, J , 268

G

Gaines, T R , 647
Gajdos, A 574
Galgaard, J B , 1318
Gallimard, J E , 1172
Gallagher, J P , 272
Galmiche, P , 141
Gammon, G D , 886
Gardiner-Hill, H , 68
Garlepy L J , 1169
Garnham, P C C , 140
Gauss, H , 719
Geiger, A J , 135
Geiger, J , ★392
Gelfand, M , 651
Gelinas, H , 502
Gellhorn, A , 269
Geoghegan, F , 727
George, C W , ★754
George, I L , 1308
Gerle B , 142
Gibson, H J , 67
Gibson, T E ★1255
Gillespie, J B , 886
Gilliam, A G 268
Giraud, P , 353
Glenn F , 720
Glover, R E 274
Glover, R P 648
Glovne, H F , 426
Glueck H I , 137
Gohar, M A , 651
Goldman J , ★749
Goldsmith, G A , 501
Gooding, C G , 894
Goodwin, M S , ★10
Goodyear W E ★1208
Gordon H H 888
Gordon, I ★588
Goss, A S , 778
Gossels, C L , 497
Goswell G , 1246
de Gracinsky P 503
Graham, E A , ★97
Graham F , J C 730
Graham, R R , 647
Graham, R H 623
Granet, E 127
Grant W T 889
Grasset, E , 1316
Gray, I R , 651
Green, D H , 627
Green, H H , 353
Green, W L , 723
Greenberg, M , 720 ★901
Greenblatt, R B 723
Greene, J A , ★1053
Greenfield, R E ★616
Greengard, H , 1307
Greenspan, E , 424
Greenwald, I , 891
Griffin, W D , ★907
Griffith, G C , ★974
Griffiths, D L , 806
Grille Cendan, V , 69
Grimson, K. S , 1307
Gros, C M , 651
Gross, E R , 1305
Gross, L , 800
Grossman, M I , 1307
Grove, J S , 647
Grubin, A F , ★752
Grynbaum, B , 351
Guerriero, W. F , ★832
Guillot, M , 353
Guiteras, A F., 803
Gunning, N S , 429
Gunson, E B , 727
Guri, J P , 650
Guttmann, L , 1242
Guzman, F , 804

H

Haag, H B , 350
Habel, K , 427
Haber, L , 725
Haberman, S , 201
Hadorn, W , 967
Hagerman, G , 1246
Hahn, R D , 425
Hair, H C , 727
Hairston, N G , 132
Halbrecht, I , 69
Haldi, J , 202
Hall, S , 141
Halvorson, L C , 781
Hamberger, C A , 138
Hamburger, M , Jr 137
Hamilton, T R , 572
Hampton, O P Jr , 349
Hanley, F W , 344
Hansen, A E , ★10, 1240
Hanson, M C , ★299
Harbitz, H F , 142
Hardt, H G , Jr , ★907
Hargrove, S W G , 140
Harkins, H N , 134
Harkness, A H , 574
Harper, F G , 1245
Harrington, D O , ★669, 719
Harrison, J B , 725
Harrison, R J , 574
Harrison, T , 1242
Hart, J F , 891
Hartman, D L , ★392
Hartman, T L , 723
Harvie, F H , 647
Harving, F , 806
Harwood, H B , 1172
Haskell, C C , 645
Hassin, G B , 1309
Hathaway, M L , 202
Hatoff, A , 570
Havens, W P , Jr , 501
Hayman, J M , 570
Headings, D M , 129
Heck, F J , ★147
Heimann, H , 1244
Heinle, R W , 724, ★739
Helander, S , 1246
Hellems, H K , ★522
Helsby, F K , ★407
Helweg-Larsen, H F , 354 895
Helwig, E B , 1313
Hendrick, J W , ★1258
Henle, G , 618
Henle, W , 648
Herbert, F K , 69
Heringman, E C , ★663
Hermans, E H , 504
Hermon, R , 428
Hernandez Morales, F , 204
Heitz S , 726
Hertzberg, G , 1247
Herz E , ★476
Hess, A D , 201
Hess, V F , 1305
Hess, W , 141
Heterick, R H 725
Heuer, G J , 725
Heurtematte, A , 353
Hewlett, J S , 1171
Heyman, A , ★10
Heyns, O S , 1037
Higgins G , 197
High, R H , 804, 1245
Higley, C S , 61
Hill, A J , Jr , ★10, 886
Hill J M , 201
Hill, K R , 69
Hill, M R , ★456
Hill, T S , ★445
Hill, W. R , 1036, 1244
Hines, M O , 351
Hinman, F , Jr , 132
Hinshaw, H C , 269
Hinton, J W , *500*
Hirsch, E , ★1263
Hirsh, H L , 270, ★657, 1171, 1309
Hoagland, C L , 499, ★1181
Hochberg, L A , 804
Hodes, R , 719
Hodges, F J , 272
Holt, H , 1306
Hoffman, R S , 720
Hoffmann, W , 652
Holbrook, C S , 65
Hollander, F , *1307*
Holley, H. L , 1305
Holley, S W , 573
Holman, C W , 863
Holman, H D , 136
Holmes, H N , 649
Holzer, C E , 1036
Hooper, J M , ★815
Hopkins, J G , 886
Hopkins, L A , 268
Hopp, E S , 133, 645
Hornick, E J , 135
Horrax, G , 273
Houghton, L E , 805
Houston, C. S , 650
Howard, G T , Jr , 427
Howard, M A , 204
Howell, K M., 1242
Hoyne, A L , ★661, 721
Huang, C H , 571
Huebner, R J , 272, ★901
Hughes R R , 352
Hultquist, G T , 730, 1318
Humble, J G , 729
Humphrey, F A , 778
Hunnicutt, L G , ★84
Hunninen, A V , 1242
Hunter, C A , 271
Hunwicke, R F., 727
Hussey, H H , 1171
Hustin, A , 1038
Hutter, S , 1247
Hyman, M E , 1310

I

Ignacio, P , 351
Ingersoll, F. M , 1035
Ingraham, H S , 207
Ingraham, N R., ★10, 886
Ipsen, J , 1243
Irons, J V , ★813, ★815, ★819, ★820
Irwin, C. E , ★231
Isaacson, N H , 1171
Ittner, E J , ★78
Ivy, A C , ★373, 1307

J

Jacobson, S D , 127
Jahr, H M , 197
Jakobowicz, R , 805
Jankelson, I R , 1240
Jansen, C A L 1317
Jeans, P C , ★245
Jennett, R , ★832
Jennings, R , 1303
Jervell, O , 504
Jørgensen, J , 1316
Johansmann, R J , 886
Johnson, B , ★675
Johnson, L V , 647
Johnson, R W , Jr , 723
Johnson, W M , 1238
Johnstone, W M , 647
Jones, C M , ★741
Jones, C W , 139
Jones, J P , 864
Jones, R. N , 503
Jones, T D , 203
Josselyn, D W , 124
Jost H , ★445
Jouve, A , 353
Julliard, J , 729

K

Kabat, H , 139
Kaiser, A D , 130
Kaleita, E , 202
Kaminski, S D , 431
Kane, C A , 570
Kane, L W , 501
Kantor, J L , 1238
Kaplan, H S , 135
Kaplan, I I , 1245
Karelitz, S , 1310
Karotkin, L , 139
Keisselbach, M , 425
Keitel, H G , 345, 716
Kendall, F E , 133
Kendrick, P , 268
Kennedy, J D , 134
Kennedy, R L J , *648*
Kent, J F , ★1001
Kepler, E J , 136
Kerr, J G , ★1003
Kerr, M , 140
Kersley, G. D , 67
Kesson, C M , 574
Kettel, K , 63
Kiefer, E D , ★1055
Kimbell, I , Jr , 649
King, A G , 129
King, E J , 208
Kinney, T. D , 1035
Kintner, A R , ★1207
Kirby, W M M , 571
Kirk, G. R , 428
Kisman, M , 1172
Kittle, C F., ★1202
Kjaergaard, H , 504
Klatskin, G , 500
Kleckner, M S , ★998
Klein, I F , ★901
Klein, J , 129
Klemme, R M , 1241
Klinefelter, H F , Jr , 722
Klotz, S D , 891
Klyueva, N G , 1038
Knoll, E W., 1242
Knott, E M , 1240
Knutson, J W , 573
Kollbrunner, F , 967
Kooperstein, S I , 499
Kooy, A N F , 968
Koteen, H , 425, 1241
Kouwer, C H , 715
Kovnat M , ★963
Kreutzfeldt, H , 431
Krisnapoller, N H , 430
Kullman, J , 70
Kulseng-Hanssen, K 574
Kunkel, H G , 499, ★1181
Kunstadter, R H , 800
Kupperman, H S , 723
Kurland, G S , 271
Kurtz, L D , 570
Kushlan, S. D , 716
Kutler, W , ★29

L

Libby, D H , 499, ★1181
Lachnit, V , 967
Laipply, T C , 273
Lamb, M , ★299
Lancaster, J E , ★1211
Lancaster, W B , ★1211
Langer, L , 895
Langmuir, A D , ★588
Lapenta, R G , 207
Largent, E J , 1309
Larrabee, M G , 719
Larsen, K , 274
Larson, C B , 1308
Latour, J. P A , 1035
Laufer, M. W , 724
Lavery, F S , 67
Lavietes, P. H , 570
Law, W A , 1308
Lawrence, H , 886
LeCompte, C B , 139
LeCompte, P M , 351
Leifer, W , ★1
Leitner, S J , 730
Lemierre, 651
Lemish, S , 349
Lemon, H M , 137
L'Engle, C S , Jr , 203
Lennox, B , 1246
Lennox, W G , 130
Lequime, J , 729
Leriche, R , 429
Leslie, A , ★994
Letton, A H , 1245
Leutscher, J A Jr ,136
Levatin, P , 1306
Levens, J H , 350
Levin, M , 130
Levin, O S , 63
Levy, M S , 136
Lewis, C F , 501
Lewis, D B , 1243
Lewis, E L , 965
Lewis, I , 207
Lewis, L , 1171
Lhermitte, J , 806
Lichtman, A L , 206
Limarzi, L R , 201
Linas S , ★105
Lindberg R B , 725
Lindgren, I , 1318
Lindskog, G E , 132
Linn, H W , 728
Linton, R R , ★1268
Liphina, A Y , 652
Lipman, B L , 427
Lipsitch, L S , 571
List, C F , 272
Liu, P. Y , 131
Livingood, C S , 892
Livingston, S , ★1060
Lobo-Parga, G , 1247
Lockie, L M , ★754
Loeb, W M , Jr , ★ 45
Loewe, L , 61, 62, ★1263
Lommen, A , 354
London, I M , 570
Longcope, W T , 136
Lorimer, W. S , Jr , ★21
Low-Beer, B V. A , 65
Lozner, E L , 349
Lucke, B , 572
Ludvigsen, K , [illegible], 895
Lumb, G , 805
Lund, H Z , 129
Lundy, J S , 890
Lutembacher, R , 1172
Lyford, J , III, 723
Lyle, D J , ★517
Lynch, E M , 803
Lynch, F W., ★306
Lyon, G M , 725
Lyon, R A , 886
Lyons, C , ★215
Lyons, R H , 66
Lyons, W. R , 1308

M

Macaulay, W. L , 139
McCain, I , 1312
McCain, P P , 1312
McCormick, C. O 801
McCoy, W C , 65
McCrea, J F , 67
McCrea, L E , 965
McCutcheon, A , 574
McDermott, W., 1241
McDonald, J. R , 138, 206
McEachern, D., 1306
Macfarlane, R. G , 805
McGavack, T. H , 891
McGee, C J , 427
McGregor, T , 1305
Macht, D I , 205
McKay, F S , 499
McKell, D M , Jr , ★1055
Mackenzie, I A R , 1316
McKenzie, K G , 134
McKittrick, L S , 271
McLaughlin, R S , 719
McNaught, J. B , 571
MacNeill, A E , 1237
McNiff, W. T , 1305
Macomber, D W , 649
MacPhail, A , 894
Macpherson, A , 69
MacVine, J S , 727
Madigan, D G , 1246
Madonick, M J , 133
Magnuson, H. J , 136
Magnusson, J. H , 968
MaGovern, J. J., 127
Maier, J , 132
Maimon, S. N , 205, 206
Mallory, G. K , 1035
Manheims, P. J., 206
Mann, F. C , 206
Mann, I , 1315
Mann, K J , 502
Manshardt, D O , 1313
Manson-Bahr, P , 894
Mantooth, W B , ★832
Marble, A , 271
Marcuse, P , 139
Maris, E P , 501
Marques, V., 208
Marshak, A , 1245
Marshall, F A , ★1007
Martin, L , 1037
Martin, N. H , 1315
Martland, H. S , 1242
Marvin, J F., 887
Mason, P , 345
Mason, P K , 888
Massell, B F , 203
Masten, A R , 63
Mateer, J G , ★909
Matheson, A , 727
Mathews, K P , 128
Mawson, R , 352
May, H , 206
Mayer Gross, W , 573
Mayers, A N , 725
Mayers, E B , 725
Mayfield, F H , 650
Maynard, L A , 202
Meadors, M L , 552
Meads, M , 426
Mech, K F , 349
Meigs, J V , ★75, 1035
Melchior, E , 503
Meleney, F L , 426, ★675
Mellanby, E , 805, 1316
Mendez, A , 70
Menefee, E E , 204
Meredith, H V , 719
Merei, J , 1318
Merrill, A. J , 424
Mertz, E , 782
Merz, E H , 62
Meyer, K. F , ★822
Meyer, L M , 1306
Michel, M L , Jr , ★395
Michelsen, J J , 721
Miletti, M , 430
Miller, A. L , *555*
Miller, E M , ★461

AUTHORS

Miller, H C, 271
Miller, I, 127
Milligan W. L 68
Miln, D C 208
Milstone, J H, 350, 725
Minnhaar, T C, 1248
Mirizzi, P L, 730
Moffat, D A, ★1060
Molineux W. L, 348
Moloney, W C, 726
Moloshok R. E, 1310
Monnet, R, 729
Montero E, 1247
Moon, H D, 134
Moore, B E, 649
Moore, F D, 426, ★741
Moore R A, 724
Morales, P, 804
Moran, W G, 351
Morgan, A D, 805
Morgan, D, 206
Morgan, E A, 1242
Morin, L J, ★963
Moritz, A R, 721
Morris, S I, 62
Morrison J L, 424
Mortensen, V, 504
Morton, G, 1306
Moses W R, 205
Moss, M J 135
Most H, 570
Mouzon M 503
Mudd S, 892
Muir, E, 967
Muir, J B G, 894
Mulholland, H B, 861
Munck W, 968
Munkelt F H, 344
Murphy, J N, Jr ★819
Murray, G E, 1311
Murray, M M, 728
Musella, M, 198
Mushett, C W., 1242
Musselman M. M, 501
Myers W K, ★1205

N

Naclerio, E, 895
Naffziger, H C, 1168
Nagler, S H, ★755
Nath, H P, 68
Navarro, R J, 351
Neefe, J R 890
Nesbit, R M, ★296 1311
Neumann, H H, 1037
Newhouser, L R, 349
Newman, A A, 424
Newman, F W, 350
Newman, H W., 270
Newton, F C, 1168
Nickeson, R W, 200
Niehaus R F, 1304
Nixon N, 1243
Nørgaard O, 1248
Norcross B M, ★754
Nordenson, N G, 504
Norman, J S, ★771
Noro, L 652
Norris, E H, 63
Norris, J L, 803
Norwood, W D, 1307
Nourse, M. Y, ★366
Novy, F G, Jr, 889
Nutini, L G, 803

O

Ober, R E, 965
O'Brien, D E, ★691
O Brien, J R P., 197
Ochsner A, 351
Oden L D, ★735
Ohnell, H, 430
Ørning K 208
Ogura, J H, 137
O Leary, J L 721
Olin, H A, 1245
Oliver D S, 649
O Neil B, 270
Osgood C W, ★104
Ostro, M, 205
Ostroff, R A, 197
Ou, Y, 131
Oyster, J M, 424

P

Pace, N, 1304
Paddock, F K, 888
Padgett, E C, 268
Page, S G, Jr, 427
Pagel, W 141
Palmer, R E, 129
Palmer, W L 205, 206
Parker, C S 274
Parmley R T, 129
Parran, T, ★1047
Pasquier, C, 353
Patek, A J, 427, 715
Paul, J R, 1303
Paul, J T, 201
Payne, E H, 893 893
Peacock, W C, 426
Pearlman, R C, 206
Pearson, E F, 501
Pelczar, M J, 720
Pellitteri, O, ★901
Pelz M D, 800
Pendergrass, E P, 130
Pendl, O, 967
Penfold, J B, 503
Perera, G A, 499
Perkins, J E, 1304
Perkins, R F, 724
Perkins, W, 349
Perlman, R, ★771
Pernworth P, 1308
Perrault, M, 353
Perry, D J, 891, 892
Perryman, C R, 130
Peterkin, G A G, 727
Peterson, J C, 202 ★1277
Peterson, L J, ★539
Pettersson A, 968
Pfandler, U, 1247
Pfuetze, K H, 269, 648
Phelps P S, ★359
Phillips, E, ★161
Phillips, F. R, 649
Philpott, N W 1035
Platt, A D, 65
Pierce, G S, 348
Pillsbury, D M, ★1255
Pitts, G C 1304
Pitts, W R, 1240
Platou, R V, ★10, 886
Platzer, R F, 206
Plumb, R T., ★296, ★579, 1311
Poate H R G, 1172
Poindexter, A, 128
Poindexter, C A, 885
Polatin, P, 726
Polishuk, Z, 890
Pollard, M, 131
Pollock, L A, 502
Pompen, A W. M, 1317
Poncher, H G, 198, 201
Pool, T L, ★584
Poole, F E, ★91
Poppe, K, 204
Potter, R, 425
Power, M H, 136
Pratt, J J, Jr, 725
Pratt Thomas, H R, ★600
Priest, W S, 427
Proctor, L D, 134
Pulaski, E J, 571, 1036
Purdie, I A, 429
Putnam, T J, 1306
Pyke, M, 727

Q

Quinby, W. C, 203
Quintos, F N, 1306

R

Rae, V M., 208
Ragan, C, 499, ★752
Rammelkamp, C H, ★588
Ramsey, H, 350
Randall, J H, ★735
Randolph, N M 1305
Rangell, L, ★755
Rantz, L A, 132
Rapoport, P., 1171
Rapoport, S, 893
Ratcliffe, H L, 888
Rath, M M, 127
Ratliff, R K, ★296
Ratner, B, 497
Ravenel S F, ★989
Reber, H, 1317
Rechenberg, H K, 141
Redlich F C, 649
Reed, H, 68
Rees, H M, ★613
Reese, H H, 201
Reeves G S, 571
Reid, D E, 425
Reid, H, 651
Reid, R, 503
Reimann, H A 131
Rein, C R, ★1001
Reinhold, J G, 890
Remington, J H, 890
Rémy, R, 1038
Reveno, W S, ★1190
Reyersbach G C, 1310
Reyes, E 269
Rhoads, E E, 135
Rhoads J E 1168
Rhoden, A E 723
Rhoden, P, 728
Rhodes, A J, 140
Rieben W K, 69
Ring, G C, 1301
Riseman, J E F, 271
Ritter, F A, 1237
Rives, J D, ★663
Robbins, S L, 1035
Roberts, A, 726
Robertson, K, 502
Robin, J P, 429
Roder, F, 1237
Roen, P R, 570
Rogen, A S, 1315
Rohmer, J A, 729
Rohmer, P, 729
Roman Crespo, J, 1247
Rosberg, M, 1248
Rose, A S, ★5
Rose, H M, 269
Rosellini, L J, 204
Rosenbaum, H D, 571
Rosenberg, A, 888
Rosenberger, H G 720
Rosenblatt P, 61
Rosenfeld, R T, 349
Rosenfield, S Z, ★392
Rosh, R, 1245
Roskin, G 1038 1038
Ross S, 892
Rosser, C, 893, ★1003
Roth, D B, 427
Roth, H, 968
Rothschild K, 124
Rotman Kavka, G, ★657, 1309
Rowe, A H, 720
Rubenstein, A D, 1311
Rubin, I C 726
Rucker, C W, 887
Ruddock J C, 572
Ruffin, J M, 1307, 1313
Ruggiero, W F, 272
Ruhstaller, F D, 1310
Rupp, C, Jr, ★509
Rusinov, V S 431
Russek, H I, 127
Rustigian, R ★224
Ryan, J J, 721
Rytand. D A, 571

S

Sabin, A. B, ★281
Sabon, F, 729
Saccomanno, G, 1241
Sachs, R R, 1307
Sacrez R, 729
Sadovsky, A, 890
Sadusk, J. F, Jr, ★1192
Sagall, E. L, 271
Sagher, F, 269
Salley, S M, 722
Saltzman, A, 424
Sampson, J. J, 129
Sanderson, A G, 138
Sanford, H N, ★691
Sapeika, N, 894
Sapero, J J, 966
Sargent, J C, 550
Savilahti, M, 274
Sawyer, C G, 61
Saxholm R, 1318
Schafer, P W, ★1202
Schaubel, H J., 269, 648
Schepers, G. W. H, 127
Schilling, J. A., 273
Schlesinger, E B, 499
Schneck, J M, 202
Schneider, M, 650
Schneider, P., 131
Schneiderbaur, A, 1172
Schnurman, A G, 1036
Scholtz W deV, 503
Schools P E, ★359
Schornagel, H E, 1172
Schroeder, E F, 570
Schroff, J, 345
Schulz M D, ★741
Schumacher, H. C, 649
Schur, M, 888
Schwartz B S, 350
Schwartzberg, S, ★393
Scobey, R R, 721
Scott, J W, ★735
Scott, R B 574, 723
Scott, R W, 129
Scribner, W E, 205
Secretan, J P, 430
Seed, L ★907
Segers M, 729
Seidmann, M, 1248
Seitz C P, 1308
Seldon, T B, 885
Seligman, A M, 426
Seligman, E ★87
Selikoff, I J, 804
Selverstone, B, 205
Selye, H, 61
Senez J, 353
Senger, F. L, 1311
Sensenbach W, 348
Sensenich, R L 548
Sepulveda de Borquez, H 1247
Sewell, C W, 863
Shallow, T A, 966 1241
Shanahan, W M 135
Shank, R E, 499, ★1181
Shapiro, R L, 803
Sharpey-Schafer L P, 805
Shepard, C C, ★813
Shippel, S, 1037
Shookhoff, H B, 720
Shoulders, H H, 866
Shumacker, H B, Jr, 1313
Silva, J A, 351
Silverglade, A, 421
Silverman, D N, ★994
Silverstein, J, ★907
Simon, B, 721
Simon, J L, 724
Simpson, D G, 1037
Sjögren, B, 1246
Skogland, J E, 201
Slater, B J, 803
Sloan, H P, 891
Slobe, F. W, 803
Small, J T, ★459
Smith, B H, 68
Smith, C E, 720
Smith, D T, 205
Smith, F G, 722
Smith, G M, 1308
Smith, H L, 200
Smith, J M, 427
Smith, R C, 1307, 1313
Smith, W J J, ★27
Smith, W W, 1309
Smith-Petersen, M N, 1308
Smolens, J, 892
Snapper, I, 64, ★157, 424
Snell, A M, ★981, ★1175
Snyder, H E, ★219
Sokolow, M, ★981
Solomon, H C, ★5
Solomon, M L, ★105
Sommerfelt, C, 208
Sorsby, A, 428
Spain, A W, 727, 727
Spatt, S D, 129
Spence, H M, 1311
Speranski, A D, 431
Spies, T D, 206 425
Spink, W W, 132
Spitz, S, 573
Spotnitz, H, 726
Stamps, P, 272
Stangl, E, 431
Stare, F J, ★169
Starr, C G 779
Staub, H, 353
Steele, H H, ★909
Stefanini, C, 429
Steiger, H P, ★1255
Steiner, A, 133
Steiner, P E, 133
Stenstrom, K W, 887
Stept, R R, 570
Sternberg, T H, ★1
Stevens, G A, 722, 891
Steves, R J, ★306
Stevick, C P, 204
Stewart, A T, 860
Stewart H J, 424
Stewart, J D, ★216
Stewart, J V, 63
Stokes, E H, 429
Stokes, J, Jr, 350, 501
Stone, H, 64
Stone, J D, 67, 140
Stout, A P, 722
Stransky, E, 1306
Strauss, E, ★588
Strauss, E B, 894
Strom, J E, 202
Stuart H C, 719
Stuart R D, 140
Stuart Harris, C H, 274
Sturgis, C C, 570
Suarez, R M 724
Suess, J F, 1306
Sullivan, C J, ★178
Sulzberger, M B ★293
Susselman S 500
Sutherland C 728
Swan, C, 1316
Swart, C M, 554
Sweet L K, ★657
Sweet R H 205, 1310, 1310
Sweetapple H A, 429
Sweigert, C F, 886
Swenson R E, 424
Swift, P. N, 1246

T

Tandowsky, R M 424
Tanna, J F, 1241
Taquini, A C, 61
Tarlov, I M, ★476
Tartakoff, S, 351
Tassman I S, 1306
Taube H, 724
Taussig H B 1303
Taylor C A 347
Taylor C F 63
Taylor H C Jr 131, 1313
Taylor, M D, 428
Taylor, W W 62
Tepper, W R 892
Tesar, W C, ★820
Thetford, N D 268
Thiebaut, F 430
Thomas E W, 888
Thomas, E W P, 1246
Thomas M P, 572
Thometz A F, ★373
Thompson, B C, 887
Thompson, F G, Jr, 1311
Thompson, G J ★366
Thompson, M, 268
Thomson J F M, 66
Thorek, P, ★21
Thygeson, P, ★437
Tidy, H, 728
Tisdall, F F 647
Todd J, 886
Tornell, E 504
Topping, N H, ★813
Tostevin, A L 1316
Trager, W, 132
Treloar, A E, 1036
Tricerri F E P, 895
Trinção, C 142
Tucker, J L, 892
Turner, C E, 1304
Turner, J W, 886
Turner, L, 137
Tuttle, A D, 1308
Twombly G H 131
Tyson W G, 137

U

Udaondo, C B 806
Uhde, G I, 889
Ulmer, J L 650
Ungar, J, 428
Urioste, R 503
Ustvedt H J, 67, 1318
Utterback R A, 1241

V

Vallee, B 137
VanderLaan, W P 500
van Dorsser G J E, 1035
van Herick W, 1303
van Heuven J A, 70
van Ouwerkerk, L W, 652
Van Rooy, C W, 204
Van Rooyen, C E 428
Van Wagenen, W P, 273
Varco, R L, 1314
Vaughan, V C, 203
de Vernejoul, R, 729
Vilter, C F, 206
Vivino, J J 1309
Vogel, M, 891
Vonder Heide, E C, 127
Von Hagen K O 889 889
von Oettingen W F, 1309
Vujic, V, 895

W

Waddell, W W, Jr, 203
Wade, L J, 64
Wagener, H P, 200
Wagner, F B, Jr, 965 966 1241
Walker, J. E, 890
Walker, J W 573
Walker, N F, 1032
Wallace, W M, ★1280
Wallerstein R, 137
Walters W, ★459
Wangensteen, O H, 1036
Ward, A T, Jr ★1060
Warin R P, 574
Warren, H A, 61
Warren, L O Jr, 1311
Warren, S, ★462
Washington E L, 724
Wasserman, L R, 1310
Watkins, A L, 721
Watrous R M, 269
Watts, J W, 891
Way, S, 428
Weagley, R C, 781
Webster, B, 1241
Weijtlandt, J A, 503

Weil, H. R., ★393
Weil, P. E., 1172
Weinstein, I., ★963
Weinstein, L., 887
Weinstein, L. J., 719
Weiskotten, H. G., ★1045
Weisman, A. I., 198
Weiss, J. A., 206
Weltzen, H. G., 1306
Welch, A. D., 724, ★739
Welch, C. E., 132
Weld, S. B., 553
Welin, S., 138
Wenner, H. A., 1303, 1314
Wertham, F., 645
Wetzel, E., 652
Weymuller, C. A., ★78
Wharton, L. H., 967
Wheeler, E. O., ★16
Whishaw, R., 352
Whitacre, F. E., ★445
White, E. F., Jr., 648
White, J. C., 574
White, P. D., ★16
Whiting, E. G., 720
Wichtl, O., 354
Wickham, W. A., 891
Widmann, R., ★604
Wieberdink, J., 208
Wiederhold, A., 70
Wiener, A. S., 885
Wiese, H. F., 1240
Wiesner, B. P., 140
Wilbur, D. L., 1171
Wilder, R. M., Jr., ★522
Wilhelm, F., 1171
Wilkinson, E. E., ★10
Willcox, R. R., 428
Willerson, D., ★393
Williams, D. L., 966
Williams, H. A., 273
Williams, J. L. D., 428
Williams, O. L., 1308
Wilson, D. C., 728
Wilson, D. J., 200
Wilson, G., ★509
Wilson, J. W., ★159
Wilson, R. A., 1243
Winckel, C. W. F., 431
Windle, W. F., 125
Winkenwerder, W. L., 1242
Winkler, A. W., 135
Wiprud, T., 624
Wird, K., 968
Wirth, W. R., ★395
Wirtschafter, Z. T., ★604
Wishart, D. E. S., 1242
Wishart, J. H., ★539
With, T. K., 1316
Witts, L. J., 1315
Wolf, W., 344
Wolfe, D. M., ★819
Wolfer, J. A., 1313
Wolman, I. J., 128
Wood, G., 64
Wood, M. N., 1240
Wramner, T., 1248
Wright, C. S., 1305
Wright, G. P., 573
Wright, H. S., Jr., 722
Wuerthele, V., 1312
Wynn, W., 202

Y

Yeomans, F. C., 272
Yerushalmy, J., ★359
Young, B. R., 500
Young, M. D., 201

Z

Zabludovich, S., 430
Zacks, D., ★359
Zamcheck, N., 721
Zimmerman, H. M., 268
Zinnemann, K., 894
Zohman, B. L., 127
Zollinger, R., 1038
Zuidema, P., 430
Zwerling, H. B., 1245

INDEX TO PAGES

OF THE JOURNAL, ACCORDING TO WEEKLY ISSUES—VOLUME 133, JANUARY—APRIL, 1947

Pages	No.	Date
1— 74	1	Jan. 4
75— 146	2	Jan. 11
147— 214	3	Jan. 18
215— 280	4	Jan. 25
281— 358	5	Feb. 1
359— 436	6	Feb. 8
437— 508	7	Feb. 15
509— 578	8	Feb. 22
579— 656	9	March 1
657— 734	10	March 8
735— 812	11	March 15
813— 900	12	March 22
901— 970	13	March 29
971—1044	14	April 5
1045—1174	15	April
1175—1254	16	April
1255—1372	17	April